

**HOW YOU CAN STILL SAVE ON 1989 TAXES**

December 1989 \$2.95  
Canadian \$3.25

# Home Office

**C O M P U T I N G**™

BUILDING BETTER BUSINESSES WITH TECHNOLOGY

**The Worst  
Time Wasters  
And Best  
Time Savers**

**Buyer's Guide:  
Hot, New  
Fax Machines**

**84 Hardware  
And Software  
Reviews**

**Protect  
Your Ideas:  
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Copyrights**

**How to  
Increase Your  
Computer's  
Memory**

## YEAR-END SPECIAL

**Best Business  
Hardware and  
Software  
Of the Year**

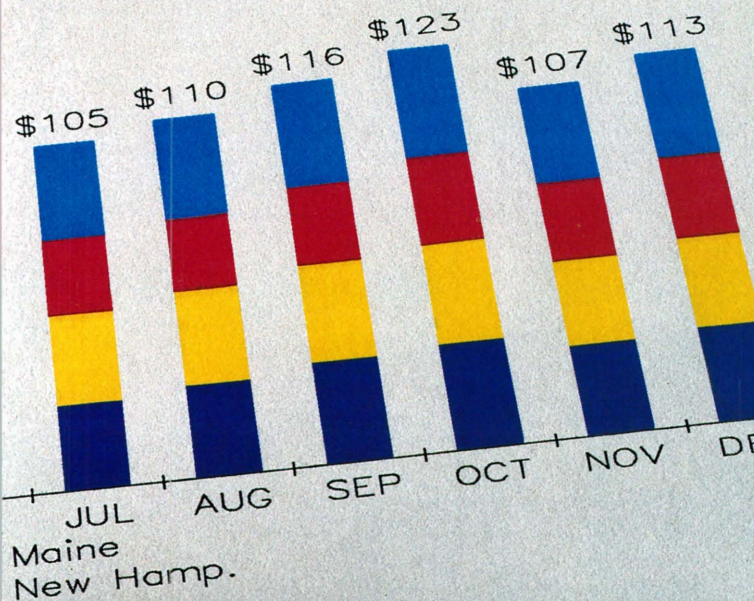
**Gifts for the  
Home Office**



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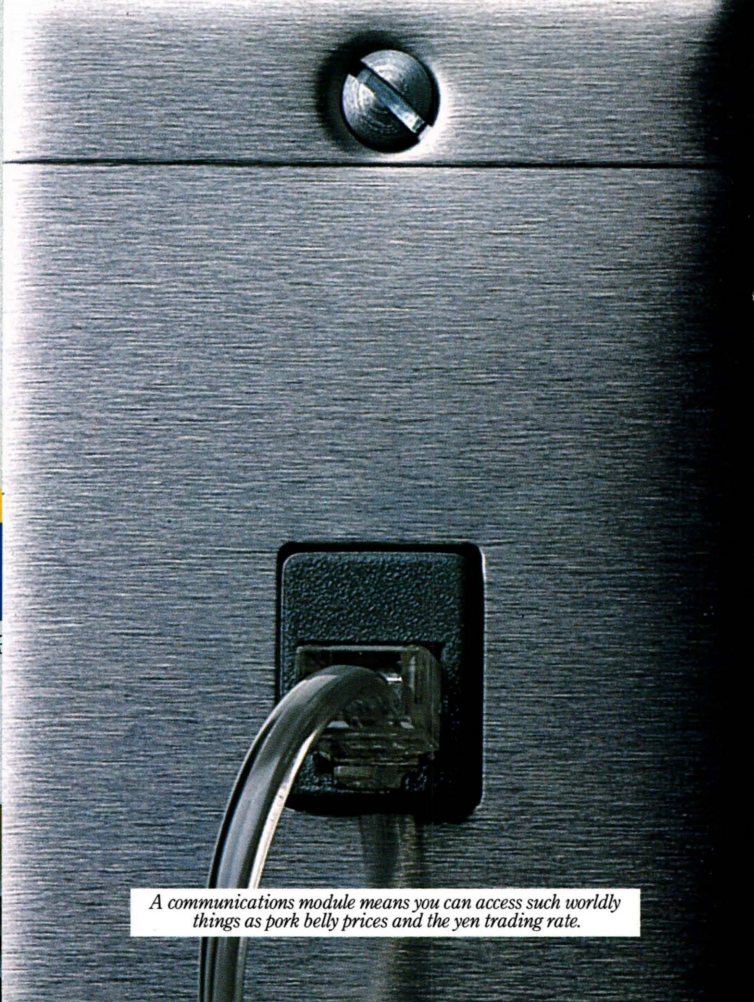
\$8,381 | \$11,488 | \$13,580  
 12,934 | \$19,093 | \$22,575



Get a good look at your financial, sales and marketing schemes with professional-looking charts and spreadsheets.



Know everything from your client's current address to the amount of his last order with the Works database.



A communications module means you can access such worldly things as pork belly prices and the yen trading rate.

Debra Goldstein  
 6745 Barrington Avenue  
 Kennebunkport, Maine 00568

Dear Ms. Goldstein,

Congratulations, your home address has been selected by the Foundation as one of the finalists for their Restoration award. You are an honorable winner and only one more award.

Our word processor gives you a corporate look. Mac® users can even design their own logos with our built-in drawing tools.



# If Microsoft Works could talk, there's one thing it would never say: “It's not my job.”

There is nothing like being the owner of a growing business. You run accounting. You run sales. You run the warehouse. You run everything. And, if you're not careful, you can run yourself into the ground.

Before such a catastrophe can take place, hire Microsoft® Works. The best employee a growing business can have.

Microsoft Works is business software that actually has a number of powerful tools in one easy-to-use program. You get a word processor with spelling checker,\* a spreadsheet with business graphics, a database with reporting and a communications module all rolled into one. For both the PC and the Macintosh®.

We made all of them easy to learn with on-screen training and help available at the touch of a single key.

The better news is, every application works together without office politics, coffee breaks or vacations getting in the way.

Each application has the same look on-

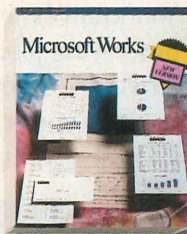
screen, so there's no shock when you move from one to another. Making it a breeze to mix charts, text and data together to create a perfect presentation for your most critical client.

Then, when you're ready, you can produce output worthy of a Fortune 500 company's logo.

And right now, Microsoft Works comes with an education. We're throwing in a free grammar and style checker for PC users, or a free desk reference calendar for Macintosh users.\*\*

So make an executive decision. Call (800) 541-1261, Dept. K34 and put Microsoft Works on your employee roster.

It may be the only hiring you'll do for quite some time.



*When adapting to an environment, Microsoft Works is equally comfortable surrounded by a PC or a Macintosh.*

**Microsoft®**  
Making it all make sense™

\*The new version for the PC has a thesaurus. \*\*Offer good through February 28, 1990 within the 50 United States. Customers in Canada, call (416) 673-7638. Outside North America, call (206) 882-8661. © Copyright 1989 Microsoft Corporation. All rights reserved. Microsoft and the Microsoft logo are registered trademarks and Making it all make sense is a trademark of Microsoft Corporation. Macintosh and Mac are registered trademarks of Apple Computer, Inc.



**If your typewriter is here**

**Your word processor is here**

**Your PC is here**

**Your printer is here**

**And you're here**

## **You're ready for the IBM Personal Typing System/2.**

You know how it is. You start with a big word processing job. Then someone needs labels, envelopes or forms typed in a hurry. You shift over to your typewriter. Then someone needs a spreadsheet. So you run to your PC. Then you shift back to your word processor.

The IBM Personal Typing System/2 lets

you handle these normal office interruptions quickly and easily. It's actually several machines in one. It's an advanced word processor. It's a self-correcting typewriter that functions as a superior letter-quality printer. And it's also a full-function personal computer. Everything is in one place—right at your fingertips. You can switch from word processing to typing and back again by pressing one key. It lets you speed through your daily tasks, even the most complex forms and documents.

Find out how much more you can get done with the easy-to-learn, easy-to-use IBM Personal Typing System/2.

Available exclusively at your IBM Authorized Typewriter Dealer.



**To arrange for a demonstration, call 1 800 IBM-7257 ext. 153, or your IBM Authorized Typewriter Dealer.**

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## FEATURES

### YEAR-END SPECIAL

#### Editors' Picks 1989: The Best and Brightest Hardware of the Year

Page 47

The avalanche of high-quality hardware and home-office equipment that came out in 1989 made it harder than ever to distinguish the winners from the losers. HOME-OFFICE COMPUTING's editors have compiled the best hardware from the past year to present you with products of outstanding quality for the home-based professional.

#### Editors' Picks 1989: Software That Shines

Page 52

HOME-OFFICE COMPUTING's annual lineup of the year's top software—in terms of both price and performance—for people who work from home.

#### Great Gifts for the Home Office

Page 56

A compendium of home-office gifts—hardware, software, and gadgets—from day-glo printer paper to an infrared keyboard. *Plus:* A games and gaming equipment roundup.

### PROFILE

#### When Bigger Doesn't Mean Better

Page 60

Judi Devin's instructional-media firm produces training material for fast-paced Fortune 500 corporations with the help of some state-of-the-art technology. Her own business philosophy, however, makes her stick to the slow lane and boost profits by staying small.

### BUSINESS MANAGEMENT

#### Holiday Joy! Give Less to the IRS

Page 62

The end of the year is drawing near—what can a home-based professional do at the last minute to lower the tax bill? Maximizing deductions—business expenses, personal expenses, depreciation, retirement-plan payments, capital losses, and other items—can take the sting out of the annual tax bite.

### TIPSHEET

#### Put Time on Your Side

Page 66

If you run a home-based business, you probably feel like you're spreading yourself too thin. There simply aren't enough hours in the day to do what you have to do. Here, you'll find expert advice on identifying and avoiding time-wasting activities. *Plus:* Eight timesaving tips and seven simple ways to speed up your work.

### BUYER'S GUIDE

#### Fax Machines

Page 69

Do you plan to buy or upgrade your fax machine this year? If so, what is the current state of the art for facsimile technology? Here, we'll tell you what the new features are and which ones to shop for. *Plus:* Reviews of four top fax machines and specifications compiled for 26 more.

## PRODUCTS

### Hardware Reviews

Page 74

*Miniguide to EMS Boards:* Reviews and a side-by-side comparison of Intel's AboveBoard Plus, AST's RampagePlus/286, and Bocaram's AT Plus. *Organizer:* Atari Portfolio. *Telephone:* AT&T 622. *Laptop Computer:* Micro Express Lyte-Byte 3400. *Printer:* Hewlett-Packard DeskWriter.

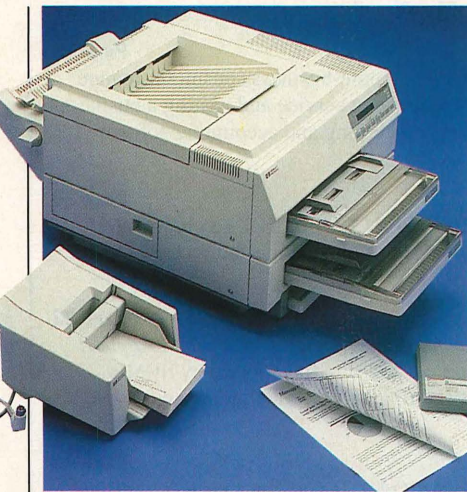
### Software Reviews

Page 84

Long reviews of *Horizon* and *PerFORM*, two custom form-designing packages; *Maximizer*, a software sales tool; and *SuperPaint*, a versatile paint-and-draw program. Capsule reviews of *Memory Lane* and *Name Tag Kit*. *Plus:* Reviews of *Microzine Jr.*, *No. 1*, *Jumbled Jungle*, *SimCity*, and *The Duel: Test Drive II*.

### Reader Survey

Your issue of HOME-OFFICE COMPUTING may contain an important reader survey. If so, please take the time to fill it out and mail it in. If not, and you would like to obtain a survey, please call (212) 505-3580 and leave your name and address. We will mail you a survey.



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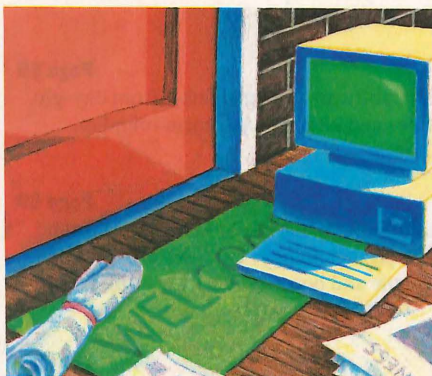
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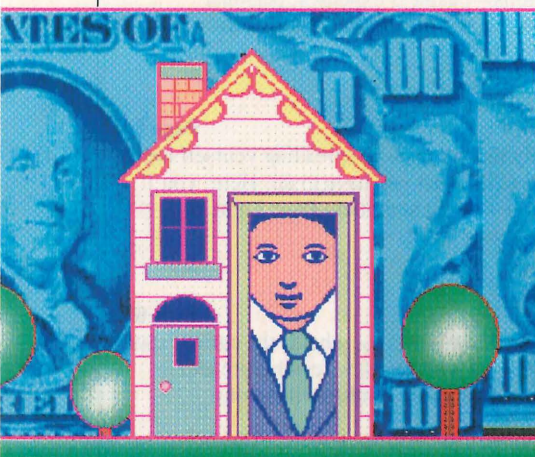
## C O L U M N S

Category	Amount	Percentage
Net Income	1071	100%
Cost of Goods Sold	27.65	2.6%
Operating Profit	4.92	0.5%
Net Profit	29.23	2.7%
Total Expense	14.31	1.3%
Net Income	10.4	1.0%

Page 12



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Page 42

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### ShopTalk

Page 18

*How to State Your Claim in the Insurance Business.* Home-business consultant Joanne Pratt gives readers advice on starting up a claims-processing service and writing a business plan to attract investors, and she recommends word-processing and accounting software for home-based professionals.

### Clinic

Page 20

*Answers to Your Computing Questions.* HOME-OFFICE COMPUTING's technical staff answers your questions about upgrading computer systems and using subdirectories to get the most out of files.

### Machine Specifics

Page 22

*Taming Microsoft Windows; Use Your Mac From Afar; Gifts for That Special Apple II User.* Hardware and software news, opinions, quotes, and rumors reported by HOME-OFFICE COMPUTING's insider columnists on the IBM/MS-DOS, Macintosh, and Apple II universes.

### Working Smarter

Page 42

*How to Get Rid of an MBA (Marginal Business Attitude).* If you don't project a serious attitude, no amount of image-building will convince people that you mean business. Columnists Paul and Sarah Edwards pinpoint five bad attitudes and offer some strategies for avoiding them.

### Workstyles

Page 112

*The Squeaky Fax Gets the Grease: Part II.* Eight months ago, telecommuting senior editor Nick Sullivan complained about his troubled, one-fax-one-phone telephone system. Readers and manufacturers alike jumped to his rescue with advice and hardware to solve his dilemma. Here's what he found out.

## D E P A R T M E N T S

### Editor's Note

Page 9

### Letters

Page 11

### Up Front

Page 12

News, advice, tips, and a shot of humor on computing, using home-office technology, and running a home business. *This month:* Office services for rent, software developers jump on the *DeskMate* bandwagon, leasing versus buying computer equipment, and HOME-OFFICE COMPUTING goes on-line and on-the-air.

### Word Processing

Page 26

*How to Design a Page That Grabs Your Reader's Attention.* Often it's not so much what you write or even how you write that attracts a reader, but basic good page design that draws an audience. Here, you'll learn the ABCs of text formatting for any word processor.

### Desktop Publishing

Page 28

*How to Get Picture-Perfect Graphics on Your Printed Page.* A good relationship with an outside printing service is vital to a desktop publisher's success. We'll show you how to format mechanicals and size and mark up art material to communicate your needs to your printing house.

### Telecomputing

Page 32

*A New and Easy Way to Get Business Information.* If you wish you could search through a powerful business database with easy, plain-English commands, Dow Jones News/Retrieval's new DowQuest interface could be the research tool you're looking for.

### Databases

Page 34

*Perfect Compromise Between Complex and Weak-Kneed Databases.* Borland's *Reflex* may very well redefine the middle ground for database-management software. Offering features and performance usually associated with full-blown relational databases, this program packs plenty of power in a flexible, easy-to-use package.

### Business 101

Page 38

*How To Protect Your Products and Ideas.* Trademark, patent, copyright . . . which one will best protect your product or idea? Follow these painless steps to guard your creations against illegal copiers and product bootleggers.

### Best-Selling Software

Page 95

### Home-Office Shopper/Classifieds

Page 108

### Advertiser Index

Page 111



GUARDIAN TRAVEL INC.

Dear Mr. Allen:  
The following confirms the details of your trip to Phoenix on  
the same airline as originally scheduled:  
FLT 405 Leaves NY Monday 8:00 AM  
Arrives Phoenix Monday 10:30 AM  
FLT 363 Leaves Phoenix Thursday 7:40 AM  
Arrives NY Thursday 3:40 PM  
Your hotel confirmation number is AL2235.  
Your mileage number has been provided to the airline.



**YOU WANT A FAX.  
YOU NEED  
AN ANSWERING MACHINE.  
BUT YOU ONLY HAVE  
ONE PHONE LINE.**

**Panasonic brings you a fax  
with a built-in answering  
machine that works on one line.**

The Panasonic KX-F120 is a fax machine that doubles as an answering machine and sophisticated phone, without doubling your phone lines or phone bill.

Every function of this facsimile system is designed to multiply your productivity. The fax machine not only reproduces 16 shades of grey for excellent reproduction of charts and photographs. It has a 5 page automatic document feeder so you won't have to eat up valuable time inserting documents into the machine. Its automatic activity report prints a list of all incoming and outgoing faxes to help you keep track of your telecommunications costs.

And because this Panasonic fax machine also has a built-in answering machine it can do something most other faxes can't. It can take all your calls, whether they're faxes or phone calls. Its built-in sensor knows whether the incoming call is a voice or fax and then switches to the appropriate function without ever getting its signals crossed.

So, if you want a fax machine but need an answering machine, the Panasonic KX-F120 was designed exclusively for you. ■



**Panasonic**  
just slightly ahead of our time.

CIRCLE READER SERVICE 56



All-wheel drive.  
All the way home.









*Engineered for the office. Designed for people.*

After you ooh-ed and aah-ed over  
the letter quality output, 3-way paper feed,  
ease-of-use, 2-year limited warranty,  
and 9 pin price on our KX-P1124 printer,  
somebody said, "Great."  
Now do it with a wide-carriage.

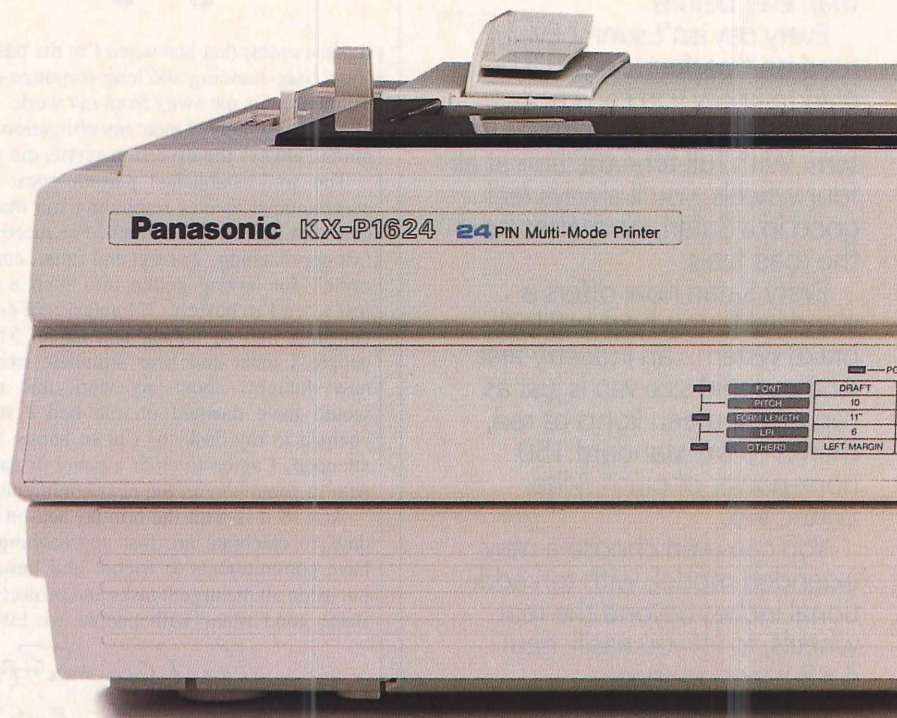
*Introducing the  
Panasonic® KX-P1624.  
Our newest 24 pin  
wide carriage  
printer.*

It's fast. Flexible. And fully-  
featured. Everything most offices are  
looking for in a dot matrix printer.  
At a price within most office budgets.

The features you'll use most often  
are available at a touch. Seven resident  
fonts to vary the look of your  
documents. Formatting for different  
document sizes.

20 features, including 4  
macros, right at your fingertips.  
What could be simpler?

Even macros that recall all the  
settings for a particular document  
at the touch of a  
single key.



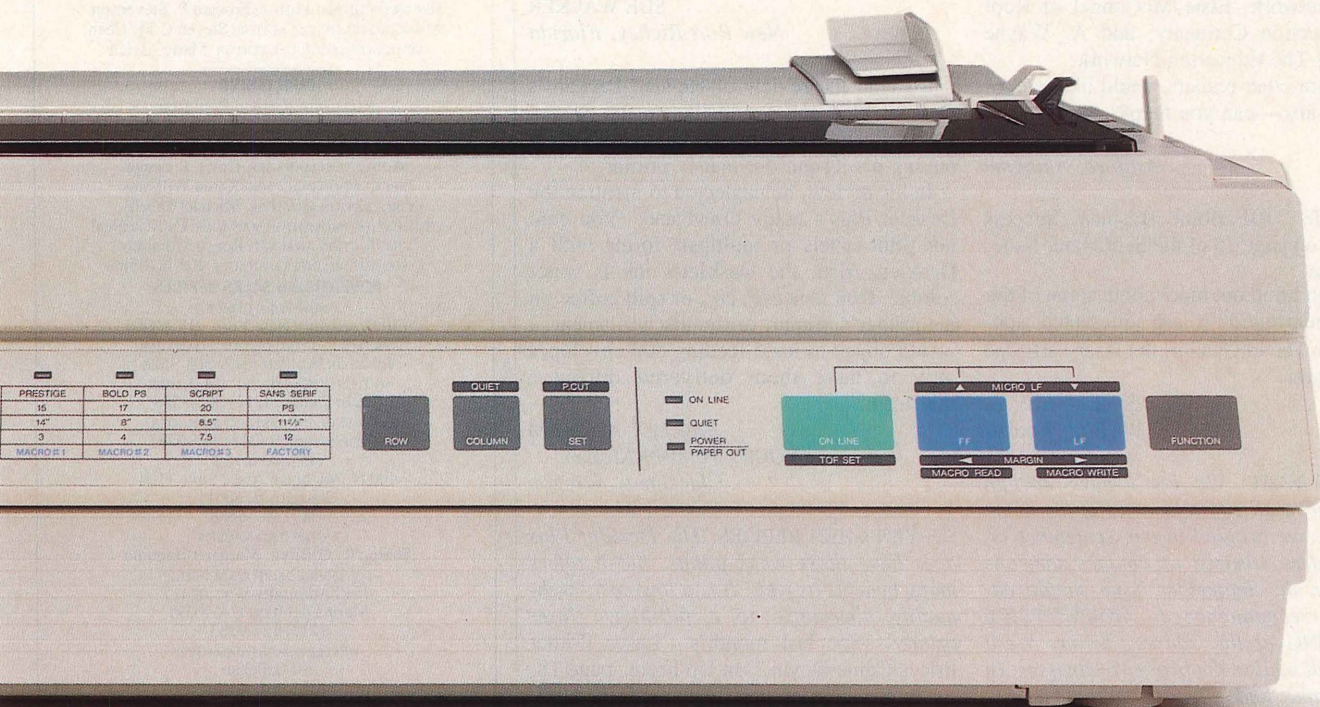
Draft Pica  
Draft Elite  
Courier Pica  
Prestige Elite  
Bold Proportional  
Space  
Sans Serif Pica  
Script Pica

True letter  
quality, high-resolu-  
tion graphics, and  
seven resident fonts,  
so it's ideal for all  
your office applica-

tions. You'll find the 1624's letter-  
quality mode as fast, or faster, than  
most popular 9 pins. Up to 63 LQ  
characters per second. With its 360 x  
360 dpi bit-mapped graphics, you can  
incorporate special printed effects  
into your documents. Like company  
logos and line art.

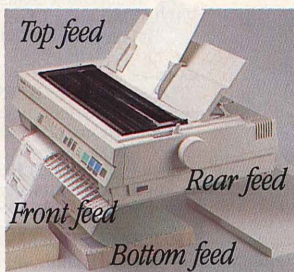


# Done.



Multiple paper paths mean you can put this printer exactly where you want it. There aren't many places in an office to conveniently put a printer.

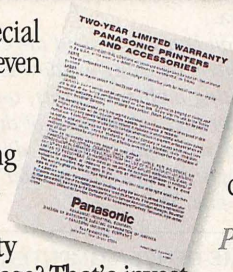
So the 1624 gives you a choice of 4 different paper paths: single sheets from the top, and fanfold from the front,



Only one paper path is available at any given time for continuous paper.

bottom or rear. A special 'Paper Park' feature even lets you feed single sheets from the top, without removing rear-fed fanfold.

A 2-year limited warranty in this day and age? That's investment protection, Panasonic-style. You'll find 2-year warranties rather rare in the printer industry. But standard with the Panasonic 1624.



See your dealer for details. So if you've been waiting for the ideal multi-purpose office printer, it has arrived. For the name of your nearest Panasonic printer dealer, call toll-free 1-800-742-8086.

Printers, Computers, Peripherals, Copiers, Typewriters and Facsimiles

**Panasonic**  
Office Automation 



## HAPPY ANNIVERSARY

Congratulations to the staff of HOME-OFFICE COMPUTING for putting together a fine anniversary issue (September 1989).

We enjoyed the success snapshots and think it was your best issue yet. We're already looking forward to next year's anniversary issue.

RORY AND GINA GOFF  
GOFF SYSTEMS  
Sharon, New Hampshire

I really enjoyed the home-business success stories in the September issue. You folks are doing a fine job—keep it up.

I would like to contact several of the people you profiled, specifically Ivan Misner of The Network, Elsie McConnel of Roof Leak Detection Company, and A. Wayne Dunlap of The Education Network.

I am sure other readers would like to contact them also—can you help?

GLEN W. WOOD  
Ashford, Alabama

The article "101 Home Business Success Stories," on page 25 of the September issue, excited me.

How can I find out more about some of the people mentioned? I am interested specifically in David Chazin, the laser-cartridge manufacturer.

BOB PERCIVAL  
Wichita, Kansas

**EDITOR'S NOTE:** *We don't have enough room to print all 101 addresses of the home businesses we profiled in our September issue. Readers wishing to contact someone profiled in the September issue should address correspondence to HOME-OFFICE COMPUTING at the address below. We'll forward all mail to the proper businesses. In the meantime, here's how to contact the people mentioned in the two letters above:*

Ivan Misner  
The Network  
1341 Ancona Dr.  
La Verne, CA 91750

Elsie and Ted McConnel  
Roof Leak Detection Company, Inc.  
P.O. Box 5628  
Lake Worth, FL 33466

A. Wayne Dunlap  
The Education Network, Inc.  
4359 N. Illinois St.  
Indianapolis, IN 46208

David Chazin  
LaserTek  
3867 Valley View Blvd.  
Las Vegas, NV 89103

## DESKJET DRAWBACKS

Thank you for HOME-OFFICE COMPUTING. Your magazine is very informative, and it has something for people at every level of computer use. Your product reviews have helped me spend my few available dollars wisely (although you occasionally tempt me to go over my budget with the more expensive products).

Steven C. M. Chen's review of the DeskJet Plus was right on the money ("Near-Laser Quality for Less," August 1989, page 61). It's my first and only printer, and it's great. It is disappointing, however, that many programs do not support the printer's operation, and the envelope-printing process is awkward and time-consuming.

SUE WALKER  
New Port Richey, Florida

I just read the review of Hewlett-Packard's DeskJet Plus and would like to tell Steven C. M. Chen that I might be interested in buying his 24-pin dot-matrix printer.

In his review, he neglected to mention the DeskJet Plus's many drawbacks. You cannot print labels or multipart forms with a DeskJet. Also, the DeskJet's ink is water soluble: Don't sneeze, cry, or spill coffee on the printer's output, or the ink will smear. I would object to hand-feeding 500 envelopes only to have them delivered during a rainstorm.

SHIRLEY A. QUAM  
YOURS TEMPORARILY . . .  
Clackamas, Oregon

**STEVEN CHEN REPLIES:** *The DeskJet Plus does have those weak points, but it offers many benefits as well. It is a low-cost, high-quality alternative to a full-blown laser printer. (See last month's "Laser Printer Prices Come Down," in Up Front, page 18, for information on new low-cost laser printers from Hewlett-Packard, Epson, and Toshiba.)*

*You can get around the envelope-printing problem by using window envelopes, but for printing multipart forms, an impact dot-matrix printer is still king of the hill. You don't need a 24-pin unit to do this efficiently, though: A nine-pin printer will do the job just fine. ■*

**HOME-OFFICE COMPUTING looks forward to letters from all readers. Please direct correspondence to Letters to the Editor, HOME-OFFICE COMPUTING, 730 Broadway, New York, NY 10003. Include name, address, and telephone number. Letters become the property of HOME-OFFICE COMPUTING and may be edited for length and clarity.**

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# NOBODY BEATS THE EXPERT

## TaxCut™ is the ONLY Expert System for Managing Your Taxes™

TaxCut's Expert System™ puts an expert at your side. Unlike any other tax preparation program, TaxCut uses artificial intelligence to let you interact with tax lawyer Dan Caine and his team of tax experts while you prepare your return. Tap their legal minds as you fill in forms and schedules on-screen. Or let them guide you step-by-step through a sophisticated interview designed to find the best tax strategy for your unique situation.

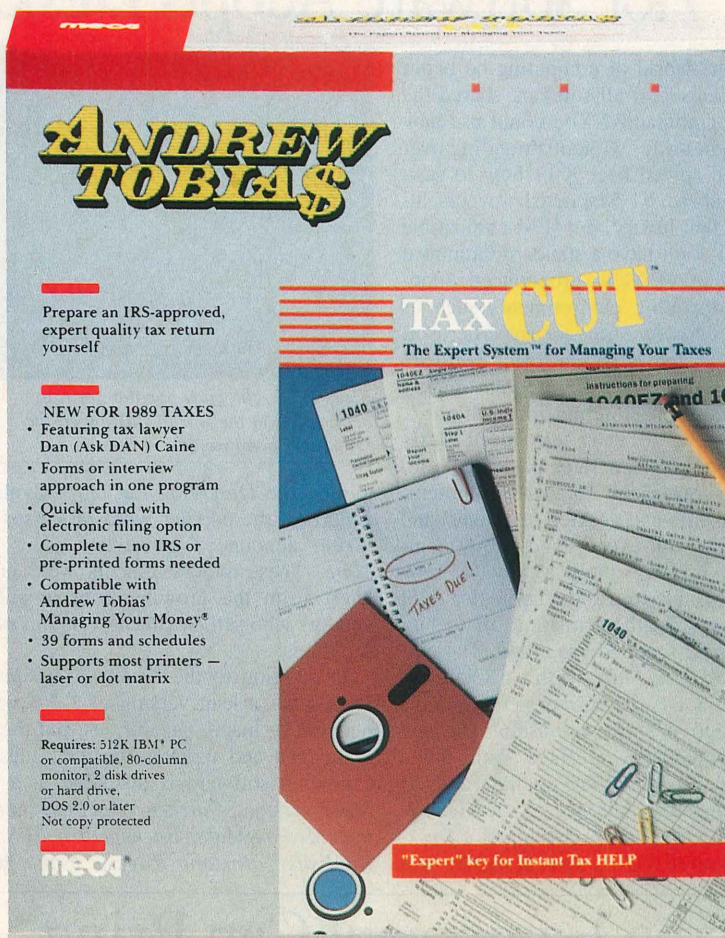
You'll discover that TaxCut is flexible. It gives you the freedom to work in your own style and at your own speed.

### More Exclusive Features

- ▶ "Auditor" flags entries which might trigger an IRS audit and recommends solutions
- ▶ Context-sensitive (hypertext) on-line HELP
- ▶ Help in English — not IRS jargon
- ▶ Smart "Jump" key toggles between a supporting schedule and the relevant 1040 line instantly
- ▶ Pull-down menus
- ▶ Auto "Recalc" of the form you're viewing with every entry
- ▶ Prepare multiple returns without exiting the program
- ▶ More forms and schedules: 10 businesses, 20 partnerships, and up to 120 depreciable assets

### Elegant Extras

- ▶ "What IF?" lets you compare up to 30 scenarios
- ▶ Instant Tax Summary Window lets you see where you stand anytime
- ▶ Imports from Lotus 1-2-3
- ▶ Pop-up calculator & memo pad
- ▶ Self-totaling scratch pads let you list and catalog deductions
- ▶ "Checklist" helps find deductions you might have missed
- ▶ "Shortcut" keys for quickest navigation



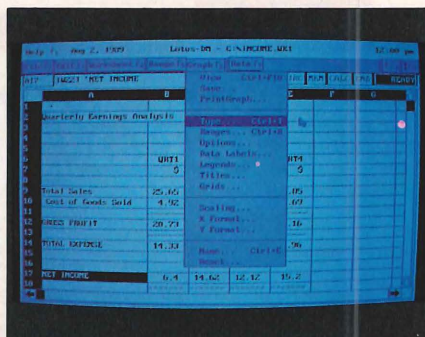


EDITED BY KAREN KANE

# Hot Software Adopts *DeskMate* Standard

Wouldn't the world of computing be better (or at least easier) if all software shared the same basic commands? You could use new software right away, without struggling over how to load spreadsheet X or how to save files in database Y. Macintosh owners already have that luxury, but IBM-compatible owners still don't have a standard Graphical User Interface (or GUI—pronounced “gooey”). As operating environments such as IBM's *Presentation Manager* and Microsoft *Windows* vie for attention from software manufacturers, Tandy's *DeskMate* is quietly and effectively sneaking up from behind.

Five years ago, Tandy introduced *DeskMate* as a no-frills integrated package (word processor, spreadsheet, database, communications package, and desktop organizer) and gave it away with every Tandy 1000 computer sold. It was simply a way for new owners to be able to use the computer right out of the box, without rushing off to buy expensive, full-featured programs. The early version of *DeskMate* wasn't a GUI, but revisions (3.3.1 is the current version) have turned it into a slick and useful package with an appealing interface (pull-down menus, dialog boxes, DOS shell). Tandy is now licensing that interface to such heavyweights as Lotus, which developed a *DeskMate* version of *1-2-3*. Just as Lotus was



Lotus 1-2-3, the most popular software application in the world, has joined the *DeskMate* bandwagon.

joining the *DeskMate* fan club, Symantec, vendor of the popular word processor *Q&A Write*, announced a version using *DeskMate*. These announcements were just the latest from the growing pool of software vendors who sell *DeskMate* versions of their programs.

In addition to the *Lotus Spreadsheet for DeskMate* (a lean version of 1-2-3 with no network or macro capabilities, but the ability to read and write Lotus 2.01 files), the following software is available in a *DeskMate* version: *Quicken*, *DacEasy Accounting*, *MemoryMate*, *Backup Pro*, *PFS: First Publisher*, *Instant Pages*, *Print Magic*,

*Paint Show Plus*, and *Venture*.

What makes *DeskMate* attractive is that it is designed to run on the older 8088 and 8086 MS-DOS computers. It doesn't require large amounts of memory or a more powerful chip like the ones used in AT or 386 class computers. Also, it is sold in the largest chain in the computer industry, 7,000 Radio Shack stores and Computer Centers.

Tandy sells *DeskMate* as a separate package, but you don't need the full version to run any of the *DeskMate* interface programs (just as you don't need *Windows* to run many programs using that system). The full current version does have some advantages that make the \$100 investment worthwhile: It not only lets you run its built-in programs, but it lets you run *any* other program from its menu system, giving you a familiar home base while using a variety of applications. Once you're in a program, its normal command structure takes over. *DeskMate* versions of other programs, however, look and operate just like *DeskMate*.

There is a move toward a standard software interface, but the computer industry may never settle on just one. For now, *DeskMate* offers a consistent look and feel to almost any MS-DOS computer (see review of *DeskMate* in “Year-End Special” in this issue).

—STEVE MILLER

## Leasing Equipment Can Bring Your Home Office up to Date

Buying is by far the most common means of obtaining office equipment. It's simple, there can be significant tax advantages, and you have total control over the transaction. But what if you can't come up with the money to purchase equipment or you don't want the service responsibilities that often accompany ownership? Then leasing may make sense for you.

Leasing companies offer one-stop-shopping: You can arrange for the financing, the equipment, and the service under one roof. Though traditionally available to large companies, small or home-based businesses can take advantage of leasing too. Companies like Tandy, Hyundai, and Dell offer leasing options for their computer products, and there are probably leasing companies in your area with a variety of products.

Leasing is popular for two reasons: You don't have to dole out a large chunk of cash right away, and the monthly payments are tax deductible. Because you don't have to pay up front, leasing can give you access to

sophisticated equipment that you might not be able to afford. The amount of a lease includes the full value of the equipment plus a finance charge spread over the term of the lease. Similar to a loan, the monthly payments are determined by the length of the lease (usually from one to four years). The longer the term, the lower your monthly payments. Since most leasing companies will not lease equipment for non-business use, you can automatically deduct leasing payments as business expenses.

There are two types of leases: operating leases and financing leases. An operating lease requires that you return the equipment at the end of the term. A financing lease is designed so that you own the equipment by the end of the term, and it usually involves additional fees. Financing leases are preferable but not always available. Shop around to find the best deal and make sure you understand the terms stated in the contract.

Leasing does have its drawbacks, however; your choice of products may be limited,



ILLUSTRATION BY JOHN HART

ed, you will have to pay more interest than for most personal bank loans (16 percent is normal), and the leasing term may be longer or shorter than you'd like. Also keep in mind that most equipment leases must be paid in full even if terminated early.

Leases are filled with confusing phrases and jargon so it's a good idea to consult a financial expert before you sign anything. He or she will also help you figure out if leasing makes financial sense for you.

—STEVEN C. M. CHEN



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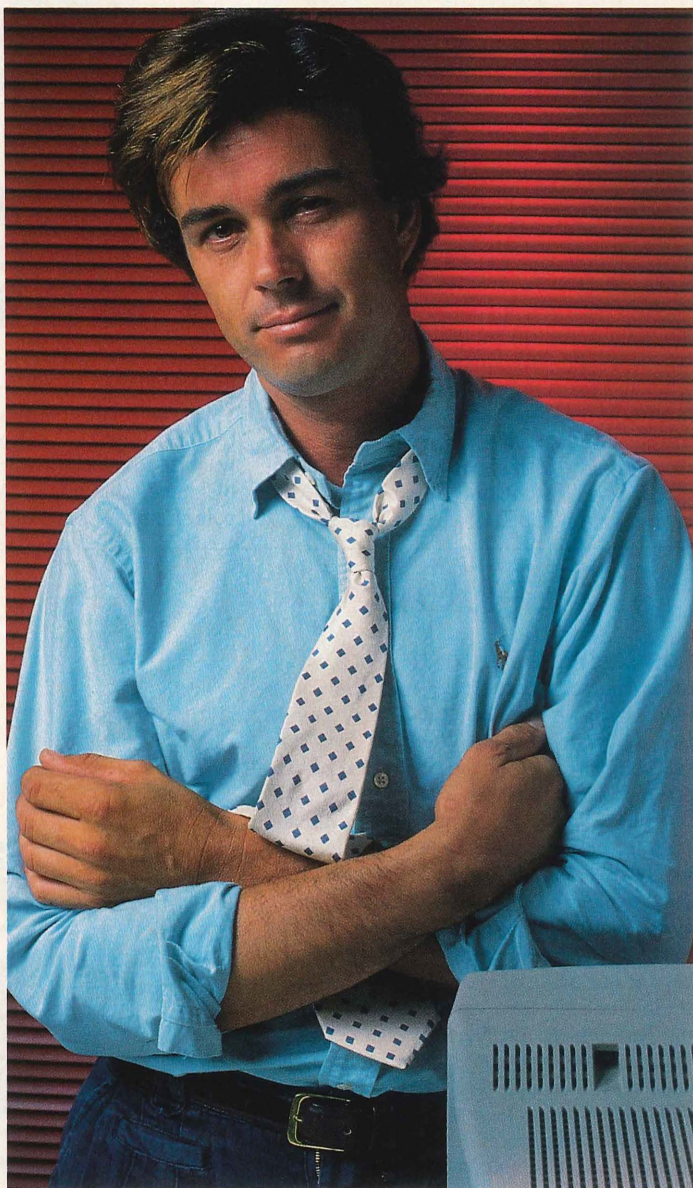
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# "I'd Like an Office for an Hour, Please"

Whether you want an office that makes you look as rich as Donald Trump, or you just need some keys copied, there's a service out there that'll do it for you. If it's the appearance of a corporate headquarters you're after, you can go to one of the executive business centers run by San Francisco-based HQ Headquarters Companies (it's got offices all over the country). HQ Headquarters' Business Identity Program offers access to 92 professionally furnished offices and conference rooms at prestigious addresses around the country. Any support services you require are included.

Office accoutrements include a private secretary and receptionist; telex, facsimile, and teleconferencing equipment; and, in some locations, desktop-publishing services. Your company name will be listed in the main lobby of the building (permanently), and HQ Headquarters will give you telex and fax numbers to add to your letterhead and business cards. If you need to travel, you can also reserve a conference room in any of the out-of-town locations, make travel reservations, and take advantage of car and hotel discounts. The price is



the real kicker: just \$75 to \$350 per month.

On a smaller scale, Mail Boxes Etc. (MBE), another national whatever-you-want-us-to-do company, sends telexes, cablegrams, mailgrams, Western Union Computer Letters, or facsimiles. MBE also packs

and ships parcels; word processes; writes résumés (at some sites); processes money orders; and prints business cards, stationery, rubber stamps, and nameplates. It also sends flowers and gifts, copies keys, takes passport and ID photos, and processes film.

Best of all, MBE offices have a street address less homey than most home-based businesses, and MBE calls the box you rent a suite. The company will hold mail indefinitely, forward it when you're on vacation, make it available to you at a moment's notice, and even tell you on the phone what's arrived and who it's from before you bother to retrieve it.

Whether it's a day in a corner office or flowers for a client's birthday, these services will answer almost any business need. Now, if it suits you, you can have the convenience and finesse of a Fortune 500 company—and enjoy the advantages and comforts of home.

—GWEN SOLOMON

HQ Headquarters Companies: San Francisco franchise office; (800) 227-3004 or (415) 781-7811  
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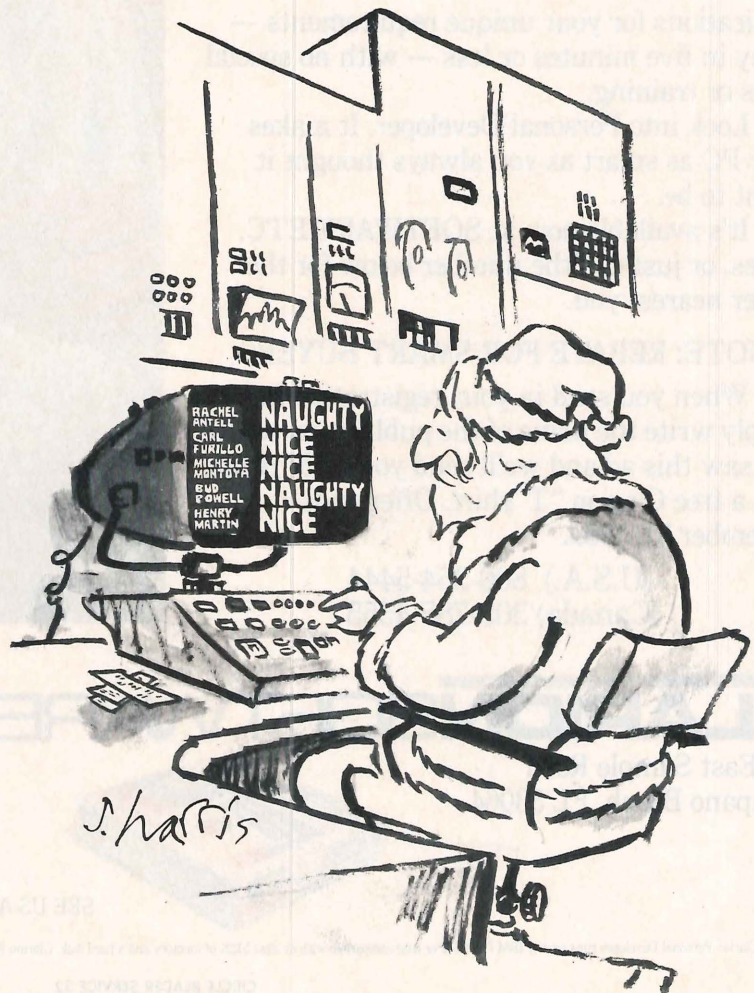
## Ad HOC

HOME-OFFICE COMPUTING (HOC) is everywhere. You expect to find it in your mailbox or on the newsstand every month. But did you know that excerpts from this magazine are highlighted on several on-line services and a radio show?

Every Sunday at 7 p.m. pacific time and 10 p.m. eastern, you can tune in and listen to "The Home-Office Show," hosted by Paul and Sarah Edwards. They discuss problems, share tips, and explore ideas relevant to the home-based entrepreneur with members of our editorial staff. To find out which station in your area carries the show, call the Business Radio Network at (719) 528-7040. If the program is not broadcast in your area, you can dial the Listen Line at (719) 528-7046 to hear the show by phone.

Many of our feature articles and product reviews are available on PC-Link, Apple-Link, and Prodigy. Prodigy members can also leave messages for HOME-OFFICE COMPUTING's experts. Just jump to the Home Business section and post your business and computer questions to the ID EXPT28C on either the Computer Club or Money Talk public bulletin board. We will do our best to provide answers. You can also leave your questions and comments on CompuServe's Working from Home Forum operated by the Edwardses.

—CONAL LARKIN





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#### WHY BUY THIS ONE?

There is a very important reason to buy DesignCAD 3D other than price: PERFORMANCE. DesignCAD 3D provides complete 3-Dimensional drawing capabilities. It's not a "warmed-over" 2D program. DesignCAD 3D allows you to draw any entity in 3-D space. This means, for example, that you can draw a curve in the shape of a spring. You can draw a circle or arc at ANY angle on ANY plane.

DesignCAD 3-D gives your Personal Computer the power of a mainframe CAD system! With DesignCAD 3-D, you can produce complete 3-dimensional models and drawings that were once considered impossible on a microcomputer!

Complete 3-Dimensional design features make it easy for you to construct realistic 3-D models. With full solid-object modeling capabilities you can analyze your drawing to determine the volume, surface area or even center of gravity! DesignCAD 3-D even permits you to check for interference between objects! Aeronautical Engineers can now find the center of gravity for a new airplane design with a couple of key-strokes. The Architect can determine the surface area of a roof for decking in a matter of minutes. The Civil Engineer can calculate the volume of a lake or dam in seconds. The Mechanical Engineer will know for sure if certain parts fit together without interference. The uses for DesignCAD 3-D are only limited by YOUR imagination!

DesignCAD 3-D supports more than 400 different peripheral devices, including more than 250 printers (dot-matrix, laser printers, color printers, etc.), 80 plotters, most mice and digitizing tablets, and a wide variety of graphics cards and displays.

Once again, American Small Business Computers has proved that you don't have to spend a lot of money to get quality software. DesignCAD 3-D provides features such as Shading, Solid Object Modeling, Hidden Line Removal, and Cross Sectioning capability. All for only \$399. No other 3-Dimensional CAD system can come close to providing the price/performance of DesignCAD 3D.

#### VERY EASY TO USE!

DesignCAD 3-D has consistently proven itself to be faster and easier to use than most competing CAD systems. In a national competition DesignCAD 3-D was matched in drawing speed by only one other CAD system. It cost \$3,000. DesignCAD 3-D was able to perform a given drawing in nearly half the time as packages costing up to \$5,000.

Customers frequently remark at how quickly they are able to learn DesignCAD. Many also comment about the power of DesignCAD.

Dr. Stephens of NASA states: "One of the things I like best [about DesignCAD 3D] is that I can pick it up and go with it." Dr. Stephens, who evaluates and recommends software for purchase by NASA, says software must meet certain criteria: "One, it must work. Two, it must be user friendly and easy to use. I push it [DesignCAD 3D] as far as I can push it. We're not using it as a toy down here, and I resent the fact that some people believe that a product's ability is substandard because of its price."

Jan Hallett, an engineer at Allied Chemical states: "We use it extensively here and are really sold on it. Plant layouts, pipe runs, fabrications, along with a lot of other things are drawn and designed. I've got AutoCAD, but very seldom if ever use it anymore."

#### PC MAGAZINE SAYS...

*DesignCAD 3D, the latest feature-packed, low-cost CADD package from American Small Business Computers, delivers more bang per buck than any of its low-cost competitors and threatens programs costing ten times as much. For a low-cost, self-contained 3D package... DesignCAD's range of features steals the show."*

#### HOW DO I GET ONE?

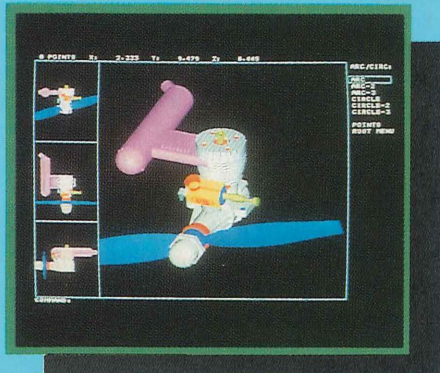
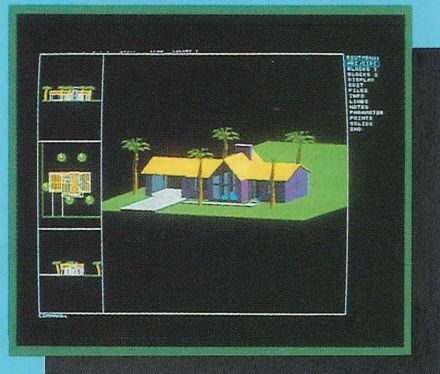
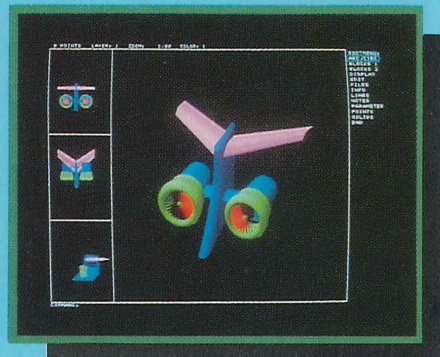
DesignCAD 3-D and DesignCAD 2D are available from most retail computer stores, or you may order directly from us. If you have questions about which program to purchase please give us a call. All you need to run DesignCAD 3-D is an IBM PC or compatible computer with 640 K RAM memory and a hard disk. Both products support most graphics cards, printers, plotters and digitizers. Free Information and a demo disk are available.

#### VERY POWERFUL!

DesignCAD 3-D version 2.1 is as powerful as most CAD systems costing \$5000-\$10,000! Features like: Complex Extrusions, a true 3D color-coded cursor, full shading or rendering capability, Blending of Surfaces, Complex Sweeps and Translations, and Boolean Operations make DesignCAD 3-D one of the most powerful 3-D CAD systems available...at any price! Engineers, Architects, and Consultants constantly tell us that they use CAD systems costing thousands of dollars which are not as powerful as DesignCAD 3-D.

#### BYTE MAGAZINE SAYS...

*"At \$399, DesignCAD 3D was the least expensive package we saw, yet it was one of the more powerful. ..Don't be fooled by the remarkably low price, this program can really perform!"*



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## Special Pursuits: Oscar-Winner Harold Russell



From this film, legendary Hollywood director William Wyler and producer Sam Goldwyn chose Russell for a major role as one of three returning soldiers in the 1946 classic *The Best Years Of Our Lives*, with Fredric March and Myrna Loy. Russell's consummate portrayal of a disabled veteran commanded instant respect and two Oscars. From then on, his main goal in life has been to help disabled people become productive. He has acted in other films and in the final two episodes of television's "China Beach" in the spring of 1989.

In 1947, the government established what is now called the President's Committee for the Employment of People with Disabilities. Harold Russell became the chairman in 1964 and remains in this position today. Although he submitted his resignation months ago, he can't quit. As of this writing, no replacement has been found.

Today, people with disabilities can be found in every profession; there are legal protections against discrimination; and soon major civil rights legislation is likely to be enacted by Congress in the Americans with Disabilities Act. Russell's company has played a big role in integrating disabled people into society, too. The company performs studies and issues reports on the disabled for state and federal governments, corporations, and organizations.

Russell speaks at meetings all across the country. He is currently working with a Texas company to help people with disabilities learn the benefits of computers. Says Russell, "It is most important to have a positive attitude—and to realize that it's not what you've lost but what you have left and how you use it that counts."

—SHIRLEY CAMPER SOMAN

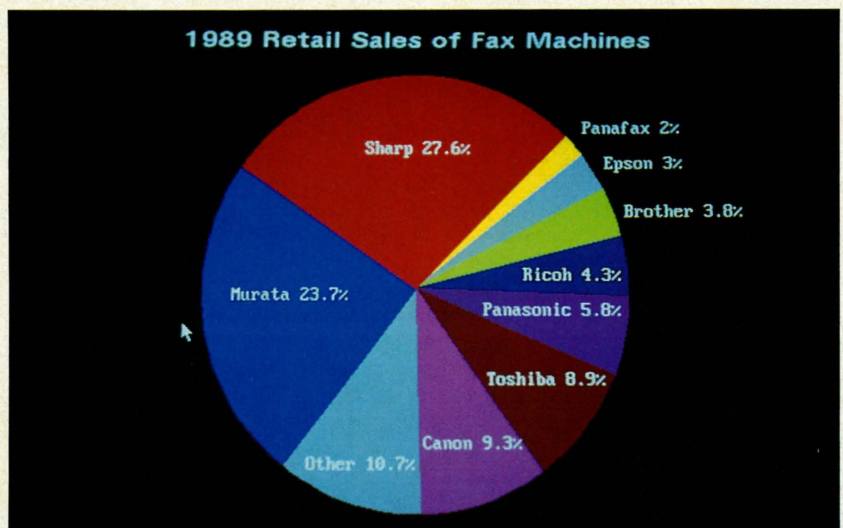
Is Harold Russell just like anyone else? He likes to think so. He and his two brothers grew up poor and fatherless. He went to Boston University at night for a degree in business administration. He married, had two children (now grown), was widowed, and remarried eight years ago. He was in the insurance business for several years. He

now uses a computer to help run his consulting firm in Winchester, Massachusetts. For most of his life, Russell has been a leader, helping change attitudes and practices toward people with disabilities.

He lost both his hands while fighting in World War II. A few months later, he was featured in an army movie to help amputees.

## 1989 Retail Sales Of Fax Machines

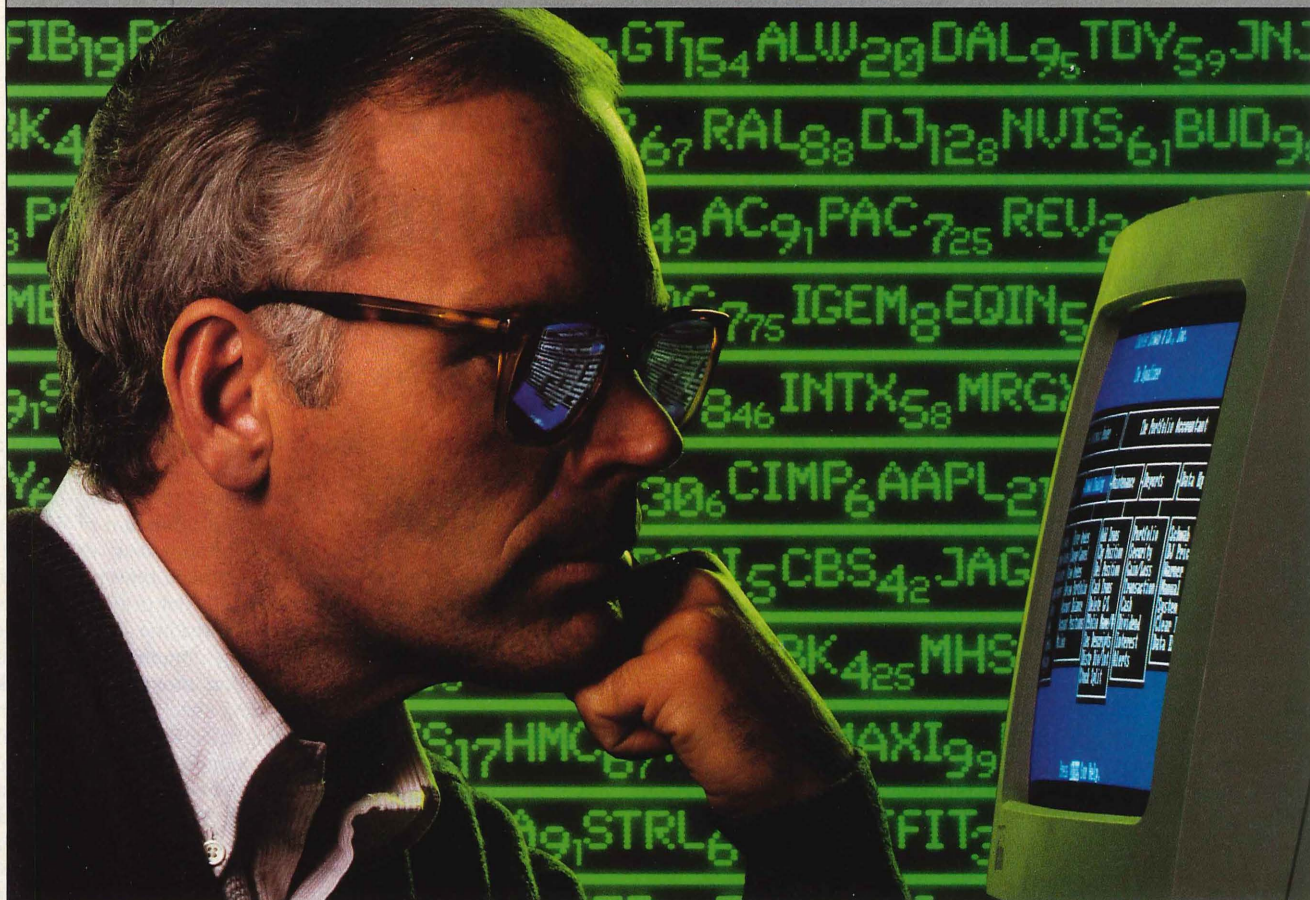
Sales of fax machines during 1989 are expected to reach 1.6 million units, according to Personal Technology Research in Fort Lee, New Jersey. "Of those 1.6 million machines, 60 percent will go to small businesses and home offices," says Personal Technology's research director Roger Lancot. Total sales for the 1990 calendar year will likely reach 2.1 million. What's significant about this fax boom is that the majority of units are being sold in outlets like K-Mart and Caldor's, which offer dramatic discounts to the first-time buyer.



Source: Personal Technology Research



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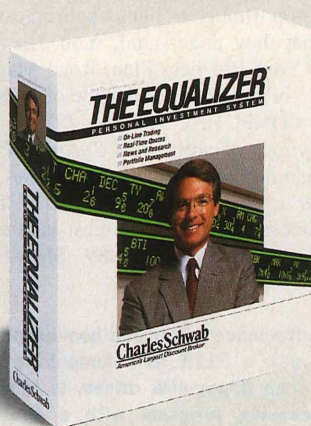


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# How to State Your Claim in the Insurance Business

BY JOANNE PRATT



The new year is the perfect time to raise your prices if you've been undercharging your customers for your product or service. When closing your year-end books, set aside a few hours to assess your costs. If you don't take a salary, factor in a rate for your time. In addition to direct expenses, calculate your overhead costs, such as space, utilities, and other household costs.

Once you've determined your ongoing costs, you'll have a better idea of what you need to charge.

**Q. I am well versed in the minutiae of insurance claims. I know that many people have trouble with the multitude of forms, and it seems to me that filling out health insurance claims is a great idea for a franchise. Does such a business already exist?**

JAMES MANSFIELD  
Brooklyn, New York

**A.** I am not aware of any franchises for handling insurance claims at this time. According to Kenneth Dalton, president of Central Claims Service of Martinsville, Indiana, you would need the equivalent of his custom-written software package and a 200MB hard-disk drive, and be able to handle specialized files for 5,000 to 6,000 customers nationwide to make a profit in this business.

It could, however, be done on a much smaller scale. You could charge an annual fee (around \$75 or \$80 per year), an hourly rate (\$25 or more), or per claim. You would probably make the most money by signing up employee groups, but there is also great demand from individuals, particularly the elderly. Consider advertising in publications for the elderly, such as *Modern Maturity*, published by the American Association of Retired Persons.

**Q. I have some investors interested in my science fact, fiction, and fantasy magazine, *Starspawn*. Adding their money to my small**

**A well-thought-out business plan is essential to starting any business, particularly if you need to raise capital.**

**savings is not enough to produce a high-quality product. Do you have any suggestions for raising more capital?**

C.B. JOSEPHS  
Brooklyn, New York

**A.** A well-thought-out business plan is essential to starting any business, particularly if you need to raise capital. *Nolo's Small Business Start-Up: How to Write a Business Plan*, by Mike McKeever (\$18; Nolo Press, 950 Parker St., Berkeley, CA 94710), is a thorough self-help book that will lead you through the process. Examples and worksheets will help you present a convincing financial opportunity to banks and investors in a format they understand. You can also refer to "Your Business Plan: Road Map to Success," in the April 1989 issue of HOME-OFFICE COMPUTING (page 49); it includes reviews of software—*Business Plan Toolkit*, *VenturPlan*, and *Venture—The Entrepreneur's Handbook*. And you'll find other business planning resources, including software, in the May 1989 ShopTalk column.

**Q. I am a freelance writer and bookkeeper, a beginner with a 512K IBM compatible and two 5.25-inch floppy-disk drives. Is there a word-processing program with a spelling checker and thesaurus that doesn't require megabytes of memory, a hard-disk drive, or lots of disk swapping? Next, is there an accounting program that keeps books for very small businesses and doesn't cost several hundred dollars? I also need tips on how to use a basic spreadsheet.**

CAROLYN BOWER  
Wooster, Ohio

**A.** WordStar USA (formerly MicroPro) has gone to great lengths to help people like you run its powerful word-processing program *WordStar 5.5* with a minimum of 384K of memory and two floppy-disk drives. It's especially good for touch-typists who don't like taking their hands out of position to use function keys. The Readme file that comes with the program is crammed with tips on how to set up the core program on two disks and use the spelling checker, thesaurus, and definitions most efficiently. The simple double-entry accounting program *Accpac Easy* (Computer Associates, 1240 McKay Dr., San Jose, CA 95131; [800] 531-5236 or [408] 432-1727) runs on two floppies and a minimum of 320K. You can buy *WordStar* for around \$190 and *Accpac Easy* for \$89 at local or mail-order discount houses. *WordStar* has an upgrade path to more powerful features, should you ever need them, and although *Accpac Easy* cannot be upgraded, it can be traded in for one of Computer Associates' more powerful accounting programs, *Accpac BPI Accounting* or *Accpac Plus*.

Finally, for an excellent overview of spreadsheets, read the spreadsheets department in HOME-OFFICE COMPUTING each month. Back issues are available—send \$4.25 per issue to Back Issues, HOME-OFFICE COMPUTING, 730 Broadway, New York, NY 10003. I also like John M. Nevison's *1-2-3 Spreadsheet Design* (Brady Computer Books, 15 Columbus Circle, New York, NY 10023; [212] 373-8093), which can help you improve your spreadsheets and depict information clearly. ■

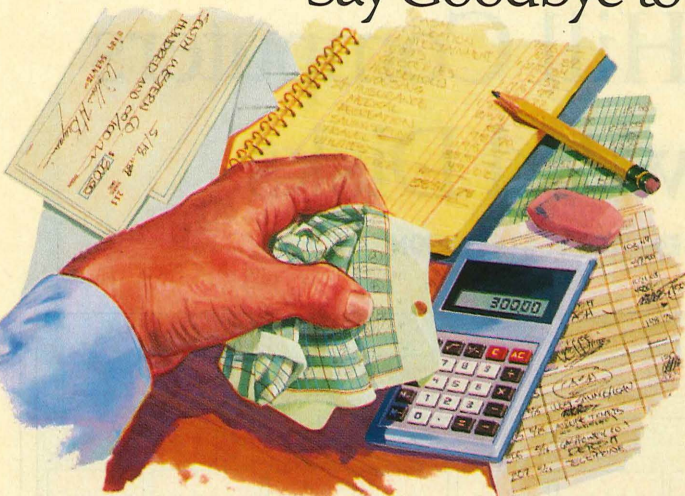
## SEND US YOUR HOME-OFFICE QUESTIONS

Send your questions on taxes, legal issues, developing a business plan, capitalizing, marketing and public relations, or any other business-related issues to Joanne H. Pratt, c/o ShopTalk, HOME-OFFICE COMPUTING, 730 Broadway, New York, NY 10003. Name, address, and telephone number must be included on all correspondence. Pratt is a nationally known researcher, consultant, and speaker on the subject of home business.



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Quicken takes the drudgery out of routine finances. It automates everything from bill paying to bookkeeping...reconciliation to reporting. Quicken does in minutes what used to take hours.

Quicken actually learns your regular bills and reminds you when to pay them. Just confirm payment amounts, and in seconds, Quicken performs 14 bookkeeping steps, categorizes expenses, and hands you printed checks addressed for mailing. Or, pay your bills using CheckFree,<sup>™</sup> the nation's electronic payment system. And, Quicken keeps perfect records of all your handwritten checks.

### A Bigger Picture with Smaller Effort

Quicken automatically organizes your finances. Imagine always knowing how much money you have...and exactly where it's going. At the press of a button, Quicken generates insightful reports such as Income and Expense, Cash Flow, Budget vs. Actual, Balance Sheet/Net Worth, Job Costing, and more.

### Relax at Tax Time

Stop dreading tax time. Quicken keeps important tax data at your fingertips automatically. In seconds, you can print an itemized list supporting your deductions. Plus, Quicken links directly to top selling tax software like Turbo Tax<sup>®</sup> and J.K. Lasser's Your Income Tax<sup>®</sup>.

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- Now combines information from all accounts into consolidated reports
- New reports, including Tax Summary and Net Worth/Balance reports...
- New wallet-size checks
- Variable monthly budget report
- Data import and export
- Canadian dates and tax categories
- Links with CheckFree,<sup>™</sup> the nation's electronic payment system

### The World's #1 Best Seller

Quicken is the best selling business and personal financial software in the world. Bill Howard of PC Magazine (December 27, 1988)

says, "Quicken is about as good as software gets—powerful, affordable and easy to use." Broadway playwright ("Mame") Robert E. Lee remarks, "This astonishingly simple program...is truly true to its name. Indeed, it does quicken the time required for routine bookkeeping."

### No Computerease or Accounting Mumbo Jumbo

Quicken is so easy, you're up and running in minutes. That's because the whole program looks and works just like the paper checkbook and register you've always used. Quicken doesn't change how you do your finances, only how fast you finish them.

### Powerful Business Features

Over half of Quicken's customers use it for small business bookkeeping. Quicken produces financial statements such as Profit and Loss, Balance Sheets and other useful management reports. It forecasts your cash flow, and tracks A/R, A/P, payroll, jobs, clients, properties, and more.

#### SPECIFICATIONS

Software Compatibility: Imports from Check-Free and ASCII. Exports to ASCII, Lotus<sup>®</sup> 1-2-3<sup>®</sup>, Symphony<sup>®</sup>, Quattro<sup>®</sup>, Excel<sup>®</sup>

Hardware Compatibility: All IBM<sup>®</sup> PC, XT, AT<sup>®</sup> PS/2<sup>®</sup> and compatibles with 320K RAM and DOS 2.0 or higher. Works with your printer and monitor; we guarantee it. Capacity: Unlimited number of bank accounts and transactions (subject to available disk space). Maximum amounts to \$9,999,999.99.

Other: Unlimited FREE technical support. Not copy-protected. Checks are preapproved by all financial institutions in the U.S. and Canada. Sample checks and order form in Quicken package. Also available for Macintosh and Apple II (feature sets vary). CheckFree Electronic Bill Payment: Pays all bills. Works with all U.S. financial institutions. Modem and software required. Special offer available in the Quicken package. A service of CheckFree Corporation.

Quicken is available at most computer and software stores.

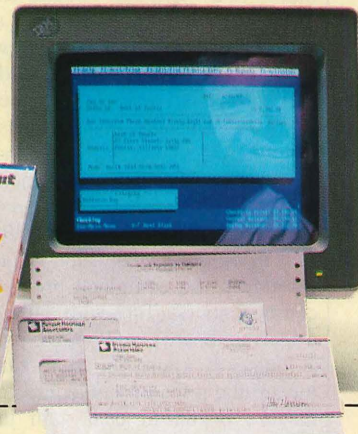
## Hello, Quicken

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# R<sub>x</sub> for Over-the-Hill Computers And Overcrowded Disks

BY STEVEN C. M. CHEN AND EDWARD P. STEVENSON

## THE AGING PC: REFURBISH OR REPLACE?

**Q. I have a plain old IBM PC, and I would like to upgrade it (or replace it with something up-to-date) before my patience gives out. What are some of the possibilities? Will my old software run on a 386-based computer?**

DERRYL JOHNSON  
Glocester, Rhode Island

**A.** Someone who is technically oriented and likes to tackle difficult problems may find upgrading an old PC an interesting challenge. However, replacing the computer is probably your best solution. Replacement, since you would want a computer that won't be obsolete soon, will undoubtedly cost you more money, but it's quick and trouble free.

Upgrading an older PC means replacing the microprocessor and related chips by means of a "speedup" board. But this is far from the whole story. You will also need to replace some or all of the following system components: power supply, hard-disk drive, disk controller, and video system. Finally, not every speedup board comes with additional RAM; if the one you choose doesn't, you'll also have to look at memory-expansion add-in cards. (For further details, see our discussion of upgrading IBM compatibles in the November 1988 issue, page 60.)

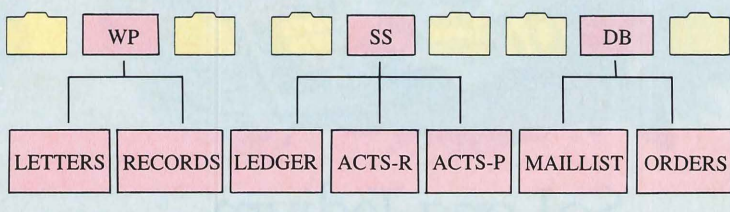
Add up the combined prices of the new components (starting with \$400 to \$700 for a speedup board), and you've probably gone a long way (possibly more than halfway) toward the price of new computer. And you haven't begun to deal with the potential compatibility problems yet. You need to make sure that any speedup card you buy will work with your system. Even if it does, the altered system may not run all your software properly. The potential for failure in critical areas is high.

In a well-designed computer system, all the components are selected and integrated to produce optimum performance. You would have to be quite knowledgeable to create such a system by upgrading. As recently as two years ago, prices for new computers were high enough that the upgrade route seemed attractive to many, if only for economic reasons. But prices have dropped dramatically, and this influences our recommendation: In the long run you will probably be better off (happier and more productive) buying a new system.

FIG. 1.

File and subdirectory entries in root

Second-level subdirectories



A disk organized by tasks, with separate subdirectories for word processing, spreadsheet, and database. Each of these contains second-level subdirectories, organized by subject.

Our first recommendation would be a 20-MHz 386-based computer. A complete system, comprising an enhanced keyboard, VGA video output and a VGA color monitor, 1MB of RAM, a 5.25-inch 1.2MB floppy-disk drive, a 40MB hard-disk drive, a parallel port, and one or two serial ports, should cost somewhere between \$3,500 and \$5,000. If you don't need color, you can save \$200 to \$300 by going with a VGA monochrome monitor (which displays different shades of gray).

A 16-MHz 386SX-based computer would be your next best choice. The 386SX (about \$3,000 to \$4,500) is a slower version of the 386, processing data at about half the speed, but it has the 386's capacity to run multiple programs, handle extended and expanded memory, and run OS/2.

With the possible exception of games (some of which are timing-dependent), your old software will run fine on a 386 or 386SX. In fact, it will run many times faster than it did on your old PC.

## MORE FILES ON YOUR FLOPPY

**Q. I can't save more than 112 files on my 3.5-inch, 720K floppy disk, even though the disk has plenty of space for more files. Is there any way to get around this problem?**

A.C.CROFT  
Wheaton, Illinois

**A.** The creators of MS-DOS set absolute limits on the number of entries contained in the root directory (the highest directory level) of any disk. (Directory entries are not necessarily all files.) Those limits are: 112 for a double-density disk, 224 for a high-density disk, 512 for a hard disk.

There is, however, a simple solution to your problem—creating and using subdirectories. Think of a subdirectory like a file

drawer within a file drawer; each directory or subdirectory on a disk can contain files and other subdirectories, *ad infinitum*. It sounds as if you have been using only the root directory in which to store your files. By creating subdirectories on each disk, you will effectively eliminate the limit on the number of files that can be stored.

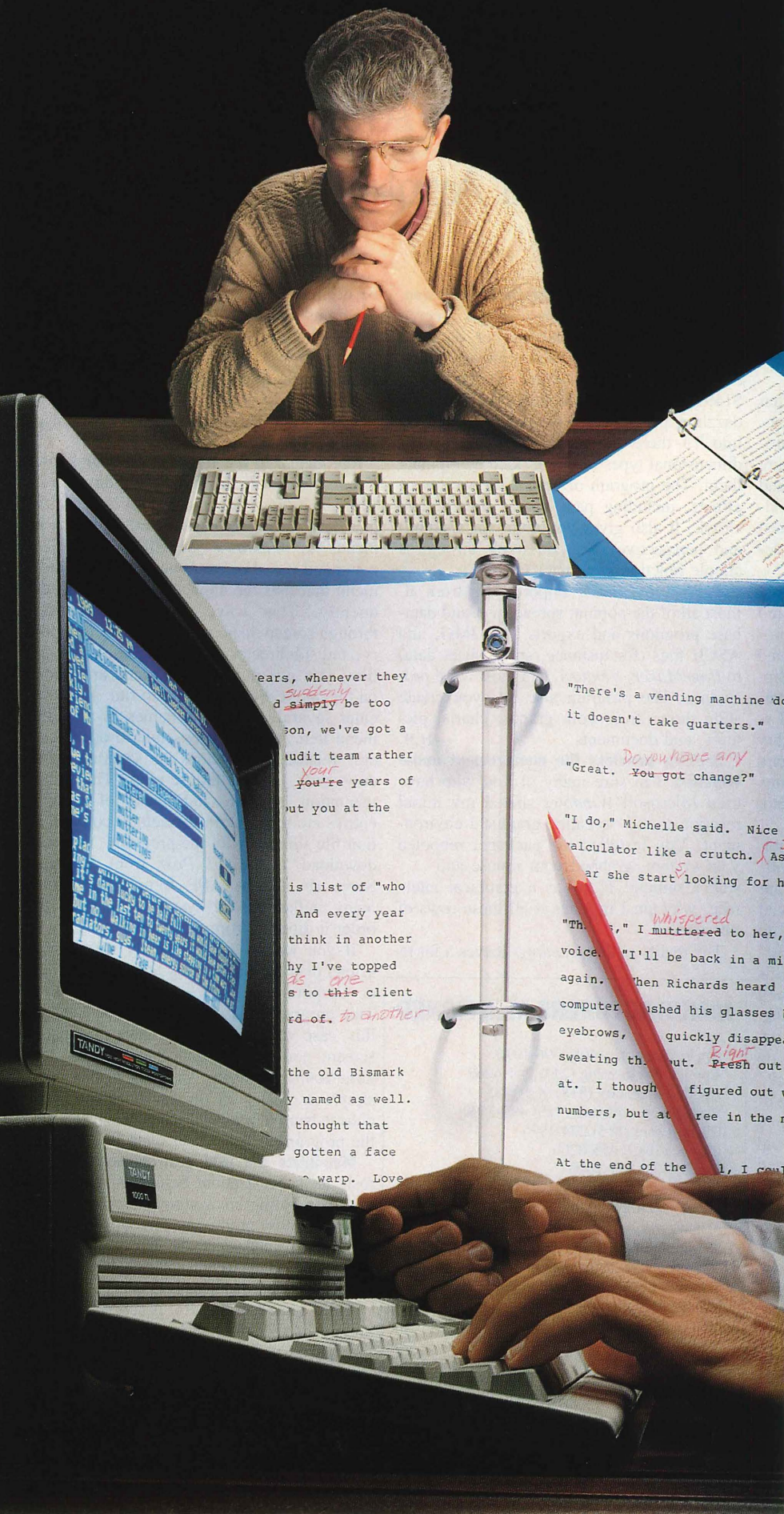
Subdirectories alleviate your entry-limit problem in two ways. First, if you organize your files into subdirectories, it's unlikely that the number of entries in the root will reach, much less exceed 112 (or 224). Second, there is no limit to the number of entries in a subdirectory. (For information on how to make and move between subdirectories, consult your DOS manual. It's outside the scope of this column, but rest assured that it is quite easy to do.)

Using subdirectories has an added benefit: It will help you keep your work better organized, since the logical function of subdirectories is to store files that are logically related in a single "location." There is no set way to organize your disk using subdirectories. Here are two possible methods: by task (a subdirectory for your spreadsheet, one for your word processor, one for your database, and so on); or by subject (a subdirectory for each client, each month, each account, and so on). (See Fig. 1, above.) ■

*If you have technical questions or computer ailments that need diagnosis, our technical staff will try to help. Although we cannot answer each letter personally, this column will deal with frequently asked questions and common problems. We reserve the right to edit letters for length and clarity. Please include your name, address, and phone number with all correspondence. Send your letters to Clinic, HOME-OFFICE COMPUTING, 730 Broadway, New York, NY 10003.*



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# Taming Microsoft Windows

## Use Your Mac from Afar

### Gifts for That Special Apple II User

#### IBM / MS-DOS

BY HENRY F. BEECHHOLD &  
STEVE MORGENSTERN

**Zip codes at your fingertips.** If you often need to look up Zip codes, you might benefit from *PC-ZIP*, a Zip-code database program put out by Melissa Data Company (\$99). You key in a community name and *PC-ZIP* will return a list of the corresponding Zip codes, or vice versa. You can also request a display of all codes within a desired radius of the selected community.

The program will accept official names, unofficial local community names, and post-office boxes. In addition, *PC-ZIP* provides telephone area codes, time zones, and latitude and longitude values for each Zip-code community, and card-file entry forms for making mailing labels. The manual is horrendous, but the program is mighty handy and easy to learn. You'll need a hard drive with about 8MB free. The company publishes a semiannual upgrade to the database (\$49).

**Running out of space? Here's a \$99 solution.** Your hard-disk drive is almost full. Now what? *PC Librarian* (United Software Security; \$99) has a clever answer. Instead of purchasing a new drive or other backup device, you can off-load your least important files (data or applications) to any DOS-compatible external storage medium, such as a floppy disk, tape, or optical disk. *PC Librarian* catalogs the off-loads on the hard-disk drive and recovers any file you need at any time. The best part is it's quick.

I first tried *PC Librarian* with a couple of small files. After I deciphered the program's convoluted command structure (the manual was no help at all), *PC Librarian* functioned flawlessly. I cleaned the files off the hard-disk drive and dumped them back onto the drive in a couple of minutes. It was so easy that I soon had many megabytes safely tucked away on a few high-density floppies, and my hard-disk drive was open for new business.

*PC Librarian* is not a backup program: It doesn't simply make copies of files and leave the originals in place. It really does function as a librarian, storing volumes out of the way until you need them.

#### Take your graphs into the third dimension.

It's impressive to watch a graph emerge from a range of spreadsheet or database numbers, but unless you're already using *Perspective Junior* (Three D Graphics; \$149), you ain't seen nothin' yet! With this dazzling program, you can turn your data into 13 three-dimensional and eight two-dimensional types of graph, then manipulate them. The program offers a wide variety of effects, including pan, zoom, stretch, and shrink. It also gives you color (or shading) and perspective. You do it all through a simple function-key menu system.

*Perspective Junior* imports files from almost all of the popular spreadsheet and database programs and exports TIF, IMG, and ASCII files (for instance, spreadsheet data) to *PageMaker*, *Ventura*, and most word processors. The program also lets you create slide shows from your graphs, charts, pictures, and documents.

—H.B.

**Seeking paneless file management under Windows.** I'm sure many of you who have tried Microsoft Windows shared my initial reaction to this so-called graphical environment. You installed the package, rebooted your system, grabbed your mouse and . . . wait a minute! If this is a graphical interface, why am I looking at all these rows of file names?

The reality is that Windows leaves a lot to

be desired when it comes to managing the programs and data files on our systems. In fact, when it comes right down to it, I don't find Windows' file-management system to be an improvement over DOS's system.

I decided to check out some of the utilities that sidestep Windows' shortcomings. Here's what I came up with:

#### Add menus to the Windows command bar.

*Command Post 6.2k* (Wilson WindowWare; \$35, including documentation) is a utility that lets you add customized drop-down menus to Windows' MS-DOS Executive command bar. For example, you can add a menu that lists the applications you use frequently. That way, instead of hunting through screen displays for the disk, directory, and subdirectory containing the program files, you just pull down a menu and click on the application you want to run. You can enter several application names as a single menu item, making it possible to open several related applications in separate windows with a single mouse click. The documentation is clear, and plenty of sample entries are included in the default configuration file shipped with the program. You can download *Command Post* from CompuServe (in the MSAPP forum) and from many bulletin-board systems, or you can order it directly from the publisher.

If you want a more visually stimulating screen display, take a look at hDC Computer Corporation's *Windows Express* (\$80). This program is also a menu builder, but in this case the menus take over the main screen, complete with graphical icons and large-font text entries. Creating menus is as simple as filling in on-screen forms. You choose from a library of icons provided with the program or draw your own.

**Mac-intize the DOS environment.** Macintosh users boast about being able to tweak their computing environment to fit personal preferences by producing personalized start-up screens, changing the background display, and adding sounds. *Windows Manager* (\$80) offers similar freedom.

There are several useful functions in *Windows Manager*, including a memory viewer that shows you how your memory is being used, commands that neatly rearrange your open windows or automatically save your files after a predetermined time or number

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## MACINTOSH

BY JIRI WEISS, JR.

of keystrokes has passed, and an alarm clock that lets you set three reminders. But I think that the best features are those that let you create custom start-up screens and background patterns. There's also a terrific screen saver.

The most Macintosh-like option I've found for Windows users is Publishing Technologies' *File Organizer* (\$200). This is a true icon-based system. All your disk drives, files, and printers are displayed on screen as graphic images. There is even a garbage-can icon for trashing files.

There's a reason that this graphical interface stuff has become all the rage: It's intuitive. And whereas Microsoft went less than halfway there with their MS-DOS Executive file-management system, Publishing Technologies went the whole nine yards. It doesn't take long to get used to this kind of convenience.

—S.M.

HENRY F. BEECHHOLD is the author of *The Brady Guide to Microcomputer Troubleshooting & Maintenance* (Brady Books, Prentice Hall Press, New York).

STEVE MORGENSTERN can be reached on CompuServe (ID: 72545,606) or on MCI Mail (SMORGENSTERN).

**Paint the town black and white.** If you think that affordable, black-and-white painting and animation programs are about as good as they can be, let Electronic Arts' *Studio/1* (\$150) prove you wrong. The program incorporates Bezier curves, special polygon tools, and an airbrush to give you the tools to create a dynamite presentation. Unlike conventional painting programs, *Studio/1* also lets you use anything—even a piece of artwork or text—as a brush pattern.

You can use *Studio/1* to create three-dimensional-looking objects by shading them. And turning your creations into moving art is as easy as dragging an image across the screen and recording its movement frame by frame. Then add sound and import the whole shebang into *HyperCard* for a presentation that's sure to impress.

**Remote Mac.** Here's some news for those of you who need to access your computers from a remote location: Farallon Computing offers a hardware and software package that can be used by one user to operate another Mac over a phone line or by two (or more) individuals who need to share files. Changes to a document made on either keyboard are

immediately visible on both screens.

The \$1,295 *Timbuktu/Remote Access Pack* includes the company's *Timbuktu Remote* software and a lightning-quick, Hayes-compatible modem, which can transmit 9600 bits per second. The included modem cable works with all Macs from the Plus up.

You can also purchase *Timbuktu Remote* software without the modem or cable for \$295. Potential buyers should be aware that they need two packs—two software packages and two modems—to make remote operation possible.

Another remote-access program is rising in the ranks: *Carbon Copy Mac* (Microcom Software; \$199 each or \$299 for two). *Carbon Copy Mac* has the same capabilities as *Timbuktu Remote* and is network compatible. It doesn't include a cable or modem.

**Handy utility package.** CE Software has released a new version of *DiskTop* (see "Editors' Picks 1989: Software That Shines"), a desk accessory that gives you access to the Mac's desktop from within any application. You can use *DiskTop* 4.0 (\$100) to copy, search for (by name, not content), and rename files; copy disks; and create new folders. It also speeds up switching between programs without MultiFinder.

If you are within, say, Microsoft Word, you can close your documents and go direct-

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ly into a *PageMaker* document without launching from the desktop. Searching has also been enhanced. *DiskTop* comes with *GOfer* 2.0, a file-finding program that normally sells for \$80. *GOfer* gives you the search-by-text-string capability that *DiskTop* does not. Registered users of *DiskTop* 3.0 can upgrade for \$30.

JIRI WEISS, JR., is a freelance writer based in Berkeley, California, and can be reached on MCI Mail (JWEISS).

## APPLE II

BY CHARLES H. GAJEWAY

**An Apple II user's holiday wish list.** Ah, the holiday season—my favorite time of year. I love the songs, the houses decorated with lights and tinsel, the wonderful smells drifting from the kitchen, the smiles and good cheer. Above all I love making a wish list for Santa.

Tops on my list this year is an Apple II hard-disk drive. I've put up with the floppy shuffle for a long time and I've waited for Apple drives with the kind of convenience and affordability that MS-DOS and Mac users have been enjoying for quite some time. At long last, my wish has come true: Several manufacturers are now offering some truly

tempting products.

The *InnerDrive* (Applied Ingenuity; \$499 for 20MB, \$699 for 40MB) and the *Vulcan* series (Applied Engineering; \$649 for 20MB, \$849 for 40MB, or \$1795 for 100MB) are two of the more interesting products I've seen. Both drives mount inside the case of an Apple IIe or GS, replacing the original power supply with a new, slightly larger box that contains a heavy-duty power supply, an additional 3.5-inch floppy-disk drive (InnerDrive only), and a cooling fan. Both are high-powered.

**Stocking Stuffers.** My software wish list is topped by *AppleWorks Classic* 3.0, my favorite version of this integrated, do-everything package (Claris; \$249, upgrade \$79). *AppleWorks* has it all—word processor, spreadsheet, database, communications, graphics, and page layout. I prefer the speed of *AppleWorks Classic* to the prettiness of *AppleWorks GS*—the new version for the Apple IIGS. And *Classic* adds some pretty impressive features, such as direct support of RAM expansion cards, greatly improved disk navigation, faster ASCII file handling, a spelling checker, better tabs for the word processor, block move and copy, 26 new functions in the spreadsheet, multiple sorts, and slicker layout creation in the database.

Also improved is Broderbund's best-selling *The Print Shop*, now titled *The New*

*Print Shop* (\$50, upgrade \$20). Featuring new graphics, an improved interface, multiple graphics and fonts, and a new calendar-making function, *The Print Shop* is even more of a must have.

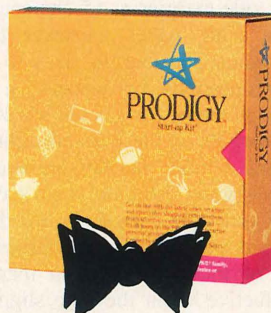
Filling out my list are some other goodies. Chronos Computers offers the Sta-Blk automatic reinking ribbons (\$60–\$75) for the ImageWriter and several popular Epson printers. At last, you can regulate the darkness of your printing and keep it consistent for the physical life of the ribbon (typically seven to ten reinkings).

**Not a creature was stirring, not even a . . .**

The only mice in my house are the ones attached to Apples. When space gets tight, I sometimes replace one of the electronic rodents with a track ball. Track balls work the way a mouse would if it were rolled over on its back: Instead of rolling the device around on the desktop, you roll the ball with your hand. Track balls take up less space and allow for more control than mice. For the GS, my current favorite is the Kensington Microware Turbo Mouse ADB, and for the IIe, it's the Kensington Microware Turbo Mouse Plus.

Happy Holidays!

CHARLES H. GAJEWAY can be reached on CompuServe (ID: 73357,3577) or on GEnie (ID: C GAJEWAY).



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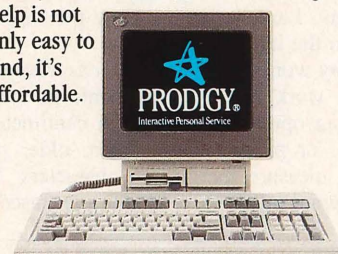
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# Design a Page That Grabs Attention

BY GEORGE CAMPBELL

## Basic Formatting Tips for All Types of Writing

Most people overlook the full power of word processors. All too often, for example, the focus is on the words themselves and not on how they're arranged on your paper. In fact, it's the appearance of a page, not the words, that makes the initial impact on your reader—whether you're writing mundane correspondence or a monthly newsletter. As basic as this observation may seem, especially if you've been using a word processor for years, it's all too easy to forget.

### MAKING YOUR MARGINS

Professional graphic designers know the power of a well-designed page. You can add this power to the documents you create. Although I'm going to focus on a typical business letter, the suggestions in this article apply to virtually any document.

Designers frequently refer to *white space*—the parts of a page not filled with words or graphics—and spend much of their time designing this very important frame around the text. For your documents, this may mean discarding your word processor's default margins and setting new ones to produce a more spacious appearance.

A typographer's rule of thumb says that a column of text should be no wider than 6 inches so that the eye can take in the entire column. With a typical letter, consider setting both the left and right margins to a minimum of 1¼ inches each on a normal 8½-inch page, which leaves you 6 inches for text. These margins produce an ideal frame of white space around your words.

If you include tables, charts, or other graphic materials in your letter, set these off from the main text by increasing their side margins. Larger margins draw the reader's eyes to the information.

Many word processors, such as Microsoft Word, work with measurements in inches (with an option to measure in centimeters, points, or picas). Some other, older programs measure margins in characters. For those word processors, set margins based on



your typeface. Pica type—which is spaced at 10 characters per inch (cpi)—requires left and right margins that are at least 12 characters wide. For elite type, spaced at 12 cpi, set your side margins at 15 characters.

When using pages narrower than 8½ inches, adjust the margin sizes to produce similar proportions. For instance, a standard 5-by-7-inch memo form could use ¾-inch or 1-inch margins on the left and right.

Top and bottom margins are equally important. A good estimate is to leave space equal to your side margins below the letterhead or, if you don't use letterhead, from the top of the page. Bottom margins are most effective when they are slightly larger—¼ inch to ½ inch more than the other three margins.

Naturally, if a letter is shorter than a full page, you'll want to increase its top and bottom margins to position your text so that it's balanced. Again, just keep the bottom margin slightly larger for a neat appearance.

Don't be afraid to experiment with margins. The measurements given above are only suggestions, but they represent good minimum sizes. Increasing these sizes can be effective, but beware of losing impact with too much white space. For example, on an 8½-inch-wide page, side margins greater than 2 inches would probably be too big.

### THE SHAPE OF PARAGRAPHS

The next thing your eye normally notices when scanning a letter is the shape of the paragraphs. Today, the trend in letter writing is toward a block format, with unindented single-spaced paragraphs separated by

blank lines. This format has immediate eye appeal. Other options, particularly for longer documents, include traditional double-spaced paragraphs that are indented at the beginning.

When composing a letter, avoid paragraphs that are either too long (more than half a page) or too short (less than two lines); they usually disturb the eye. However, when not used too often, one- or two-line paragraphs can be effective for emphasis.

Most word processors can justify text, creating even margins on the left and right sides. People are often tempted to use this feature, thinking that it makes text look professionally printed; but it's generally not a good idea. The additional spaces inserted for justification make text more difficult to read (unless you're also using proportionally spaced text, which must be supported by both your printer and word processor), and justification often looks too formal for a letter. Save this formatting feature for documents that contain multiple columns—such as a newsletter, where justified columns are more effective.

With any document, however, you'll probably want to eliminate short lines within paragraphs by using your program's hyphenation feature. If your program doesn't have one, you can manually hyphenate your text. Be careful, though, not to clutter too many lines in the same paragraph with hyphens. A good rule here is no more than two lines in a row ending with hyphens.

### EXPERIMENTS PAY OFF

Finally, experiment with your letters and other documents. Print samples and evaluate their overall appearance. Concentrate on the shape of the text and the surrounding white space. Once you have created a format that pleases you, stick with it. Word processors with a style-sheet function, such as Word and WordPerfect, let you save complete formatting instructions—including margins, spacing, tabs, and typefaces—so that you can impart a total look to any paragraph with a simple command.

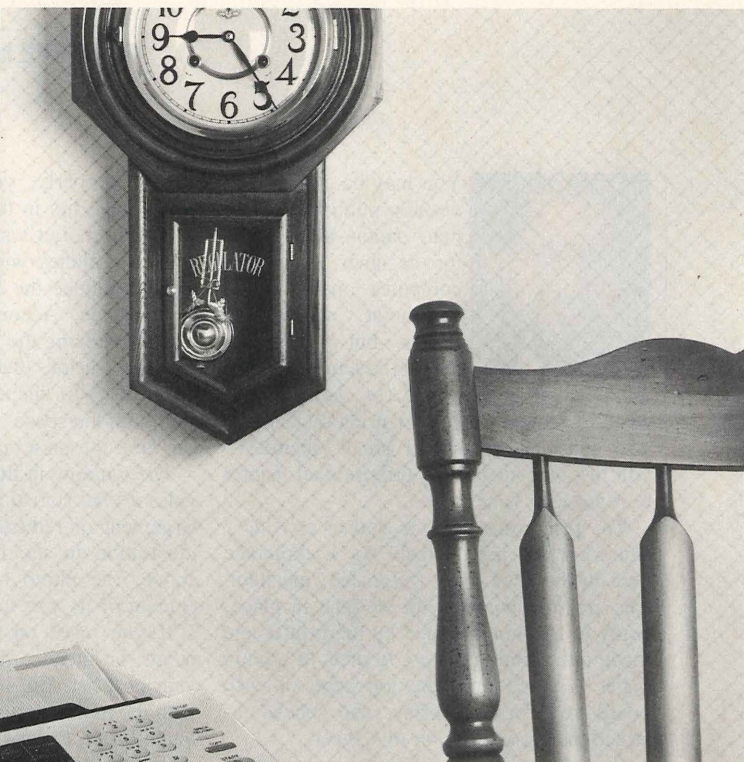
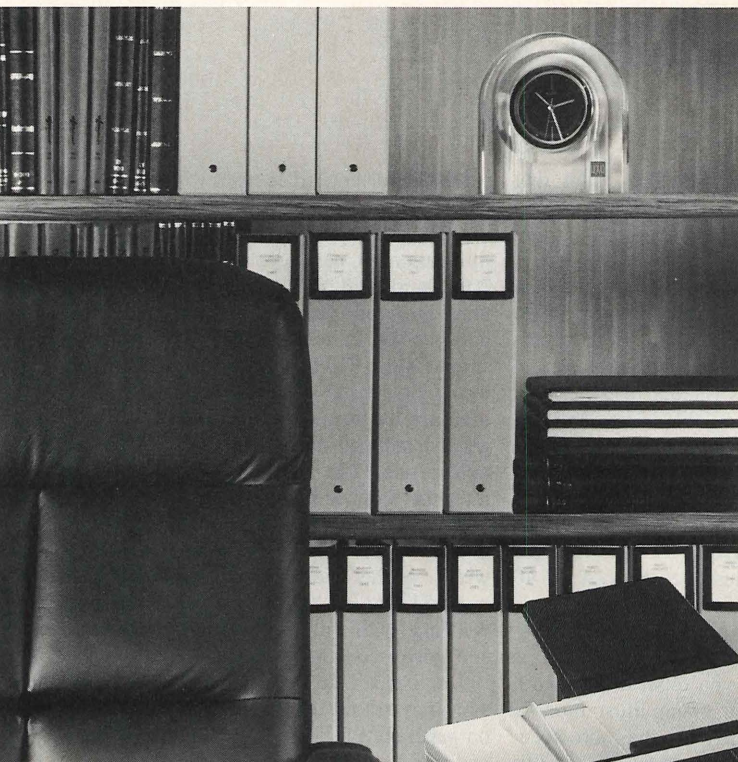
The suggestions listed above may seem obvious, but I've seen too many letters and other documents whose poor formatting made them hard to read and, therefore, turned me off. And if you can't grab your reader's attention, why bother to write? ■

GEORGE CAMPBELL lives in Los Osos, California, and frequently writes about computing.



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# How to Get Picture-Perfect Graphics on Your Printed Pages

BY STEVE MORGENSTERN



You may be an absolute desktop-publishing one-man band—writer, editor, designer, illustrator, computer operator, receptionist, and coffee maker—but at least one outside resource will be instrumental in your success. Unless your projects require only laser-printed standard-size sheets of paper in small quantities, you're going to need a professional printer to reproduce your work.

The print shop expects you to provide a camera-ready mechanical. As I explained here in the June issue (*page 30*), mechanicals are stiff boards with all type in place, ready to be photographed by the printer and made into printing plates. A sheet of tracing paper is taped onto the top edge of each board to form an overlay, and special instructions are written on this sheet.

If your project is all text, preparing a mechanical can be as simple as mounting the output from your laser printer, page by page. But what if you want to include illustrations in your project? Read on.

## MAKE THE PICTURE FIT THE SPACE

First, when the size of your original illustration, be it line art or a photograph, is not the same size as the reproduction you want, you'll have to calculate the required reduction or enlargement.

The gadget traditionally used to accomplish this chore is a *proportion wheel*. Available at any art-supply store, a proportion wheel consists of two plastic disks, one larger than the other, riveted together in the center so that they rotate freely. Around the circumference of each disk are measurements, and there's a window in the middle. To use the proportion wheel, you align the dimensions of your original photo or artwork on one wheel with the dimensions of the image as it will be reproduced on the other wheel.

Once you have the proportion wheel

aligned properly, you can make sure that your image fits in the space allotted on the page layout. Let's say I have a photograph that's 10 inches wide by 8 inches high. I want to reduce the width to fit a column 4 inches wide. According to my proportion wheel, reducing the 10-inch width to fit into 4 inches shrinks the 8-inch original height down to  $3\frac{3}{16}$  inches. If that doesn't work well with the space available in my layout, I can crop the photo or adjust the layout.

The window in the proportion wheel provides a vital statistic—the percentage of enlargement or reduction required to fit your illustration to the layout. In the example above, the photo must be reduced to 40 percent of its size to fit.

If you insist on working with measurements in inches, the proportion wheel is your best bet. But if you're willing to work with the metric system, sizing illustrations is much faster, more efficient, and more accurate with a calculator. There are 25.4 millimeters in an inch, so working with metric measurements gives you a high degree of accuracy without resorting to cumbersome fractions. And it doesn't matter whether your outside suppliers are using metric mea-

surements or not, since what we're after is a percentage of enlargement or reduction.

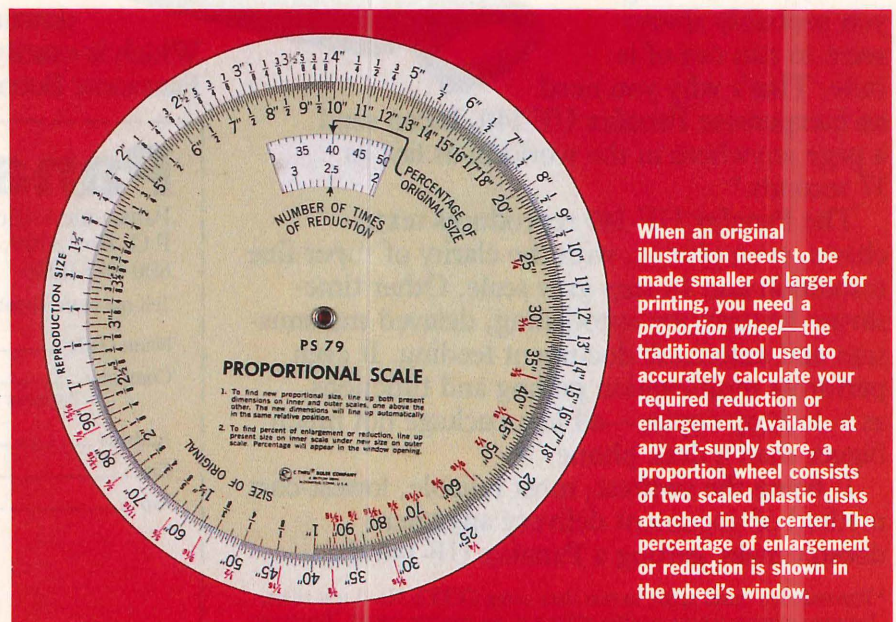
Let's size a photo similar to our previous illustration. It measures 254 mm wide and 203.2 mm high. Our column width is 101.6 mm. To figure out how high an image will be when the width is reduced to fit, we use a simple ratio: Divide the original height by the original width to get the proportion, then multiply the result by the reduced width to get the reduced height. In this example, in millimeters,  $203.2 \div 254 \times 101.6 = 81.28$  mm, the reduced height.

Now let's find the percentage of reduction. Simply divide the image's reduced width by the width of the original:  $101.6 \text{ mm} / 254 \text{ mm} = 40\%$ . I find that easier than working with quarters, eighths, sixteenths and thirty-seconds of an inch.

I realize all this multiplication and division may sound complicated as I explain it on paper, but follow along with a calculator and you'll see how fast and natural the process is—or plug the numbers into a simple spreadsheet to do it automatically.

## GETTING THE BEST REPRODUCTION

Now that you've determined the percent-



STEVE MORGENSTERN is a contributing editor for HOME-OFFICE COMPUTING.



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CIRCLE READER SERVICE 63

Number 14

# Melody Records

WHERE THE HOTTEST HITS HAPPEN

## Retailers Reprise Rockers

A handful of Melody Records' longest retail customers have determined to bring back our profitable but obscure collection of rock rarities, which haven't been in wax since 1972.

On the same note, another group of previously unreleased recordings by many of these artists will soon be available. Discovered by Melody Records' archivist Rip LaStrange, these new-found old sounds will be available as "Raw Rockers."

One unique feature of this new release will be its denim cover, with copper rivets at the four corners, a pocket and a leather patch which will be similar in design to the Levi's denim jeans so popular in the 1950's. (cont'd, page 6)

## CHORAL CONVENTION COMING

Melody is proud to be a part-sponsor of the annual "Sing It Sister" convention of international women's choral groups. This world-renowned confab brings together some of Melody's most deserving artists in a spotlighted forum that will be satellite broadcast to the USSR, Bulgaria and Sri Lanka for the first time ever, for a projected total of 37.5 million viewers. It's a red-letter event for Melody's own distinctive song stylists, the Des Moinesettes

Triplettes, a chorus of 21 women made up of 7 sets of singing triplets from Des Moines, Iowa. (cont'd, page 4)

## CHART TOPPERS

For the second week running, Melody artists show strongly in the top 20 on country, pop and heavy metal charts. This week, country singer Sugar Blues sweetens her position at #19 with her latest, "Honey, Why'd You Go So Sour?" The WheelWells roll up to #12 on the pop charts with "Rocker Arm Assembly." And moving to #20 with a bullet in metal is BulletHedd with their latest single, "Bulls-eye." BulletHedd is an L.A. band that's new to the Melody label and showing a lot of promise.

## DISTRIBUTOR B.L.U.E.S.?

To keep you up to date on industry trends, Melody Records' CEO Johnny Melody reports many distributors' profit margins are narrower than ever, due to increased vinyl costs and strong competition from CDs and cassettes. Melody says, (cont'd, page 2)





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age of enlargement or reduction for your image, what do you do with that information?

If you're working with line art, you have a *photostat* (stat for short) made of the original. Your print shop may have a stat camera, or it can certainly tell you where to have a stat made. A stat is a clean, crisp photographic reproduction shot to the percentage you request. You can place the stat in position on your mechanical with rubber cement or wax, and it will be photographed along with the type at no extra charge.

If you are working with photographs or artwork with extremely fine lines, the best route to high-quality reproduction is to send the original along with your mechanicals and have the printer shoot it to size. The printer produces a photographic negative of the image and then incorporates it with the negative film of the type portion of your page. This is known as *stripping in* an illustration.

You will have to indicate the position and cropping of the illustrations you want stripped into your page. The best way is to position a stat or photocopy (reduced or enlarged to size) directly on your mechanical. Be sure to write "For Position Only" (or FPO) on the photocopy or stat, so that no one mistakes it for final artwork.

It's a good idea to create a line box indicating the correct size and position of the illustration using desktop-publishing (DTP) software and print it with the text. This box is called a *keyline*. Place the FPO image within that box. If you want the box reproduced on the page as well, be sure to leave about 1/4 inch between the FPO copy and the box's lines.

The final step is marking the illustration and mechanical for reproduction. Attach a label to the back of each illustration, leaving a border visible from the front. Indicate the percentage of enlargement or reduction, the page on which it falls, and your name and phone number (illustrations from different jobs have been known to commingle at the print shop). To make life easier for the printer, number or letter each illustration and write this identification on the label and the mechanical overlay. If you want the keyline reproduced, trace it on the overlay, and write "Print Keyline".

## PROFESSIONAL-QUALITY TECHNIQUES

What I've presented here are workable techniques for incorporating illustrations in your publications, using any DTP software and an absolute minimum of manual dexterity. These are not the only ways to get the job done—I will cover alternative approaches that can lead to lower printing costs in a future column. But by using the basics discussed here, you can expect professional-quality results from your print shop. ■



# REPEAT PERFORMANCE

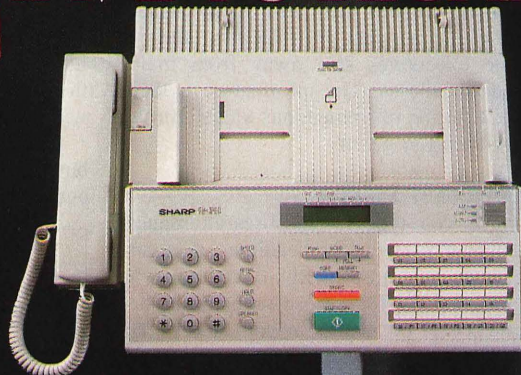
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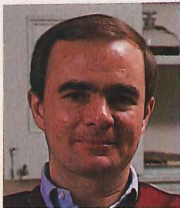
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# A New and Easy Way to Get Business Information

BY ALFRED GLOSSBRENNER



"Computer," one of the officers of the USS *Enterprise* on "Star Trek" typically says, "give me all the data on Col. John Smith, USAF, some time in the late twentieth century." Seconds later the computer responds with a complete dossier on the person in question.

Today's information seekers didn't have it quite as easy as the officers of the *Enterprise*, until DowQuest, the exciting new user interface from Dow Jones News/Retrieval (DJN/R), went into operation last summer.

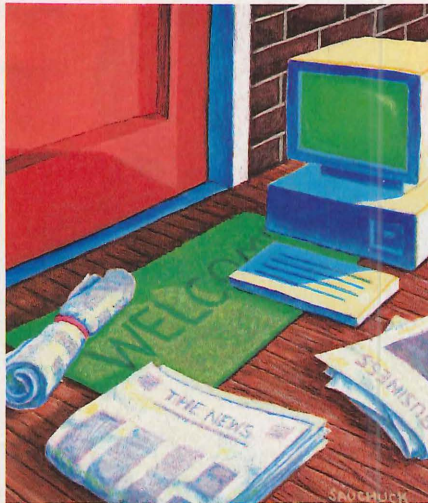
Using DowQuest to search the DJN/R databases of business publications, you can pose your query in plain English. "Tell me about oil company reaction to local government environmental protection legislation," you might enter. Or, "What are the latest developments in the auto-repair industry?"

And you don't have to worry about singular and plural forms of words or possible synonyms. If you specify the word *lawyer*, for example, DowQuest will automatically look for *lawyers*, *attorney*, and *attorneys*.

DowQuest was designed to serve the needs of corporate end users, especially people in public relations and marketing, as well as investors and others with a keen interest in financial, corporate, and industry news. If such subjects appeal to you, the information retrieved in a single DowQuest search can more than offset DJN/R's \$18 annual subscription fee.

## WHY DOWQUEST IS DIFFERENT

While a given software package might operate as smoothly as DowQuest, most huge electronic databases, which are held in large mini or mainframe computers, are not known for ease of use. Even after you've mastered truncation, proximity operators, nesting, and Boolean logic (which are the domain of information specialists), you still have to be pretty clever about picking your



**Type in your plain-English request, and DowQuest presents you with headlines of 16 pertinent articles.**

keywords, the terms you want the computer to search for.

If your keywords are too specific and restrictive, the computer may find only a few occurrences or none at all, passing over crucial articles that don't happen to contain the words you've chosen. If your specifications are too broad, you'll be swamped with information, most of it irrelevant.

It's no wonder that most small-business people, independent professionals, and corporate executives stay away from major-league databases. The information is there. And it can be of tremendous value. But it's too difficult to get at.

## A DOWQUEST SEARCH

Once you type in your search request, DowQuest presents the headlines of 16 articles that are most likely to contain what you're looking for—those with the highest incidence of the words in your query. You can then either choose to read an article that looks promising or conduct another search

using the words from one of the headlines as keywords.

When you choose an article, the system will display it one page at a time and number each paragraph. When you encounter a paragraph that is close to what you're looking for—say it's paragraph 7—you can key in SEARCH 7, and DowQuest will conduct a second search using any significant word in paragraph 7 as a keyword. The second search produces a new list of 16 headlines, most of which will be even closer to your target.

In the information trade, this search technique is called *relevance feedback*, and the process can continue indefinitely. You can, of course, request an uninterrupted display of any article at any point.

## 185 BUSINESS PUBLICATIONS

The database that DowQuest searches through contains the full text of 185 business magazines and newspapers published within the last six months. Titles include the *Wall Street Journal*, the *Washington Post*, *Fortune*, *Forbes*, *Barron's*, and *Byte*, as well as scores of regional business publications like *Dallas*, *Ohio Business*, and *Business-North Carolina*. (For the complete list of publications, ask the company for the free "New Product Fact Sheet for DowQuest.")

There are at least two other points worth noting: First, at \$1 a minute during non-prime time (6 p.m. to 6 a.m.), DowQuest is very reasonably priced compared to similar databases on other systems, none of which can do what DowQuest does.

Second, DowQuest offers more than incredible ease of use. Its hidden strength is its ability to alert you to topics you hadn't thought of and allow you to explore them at will through relevance-feedback searching.

DowQuest is not perfect by any means, but it's the closest thing to the *Enterprise's* computer yet. ■

## COMPANY INFORMATION

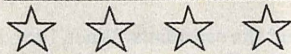
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ALFRED GLOSSBRENNER is the author of *The Complete Handbook of Personal Computer Communications (Third Edition, St. Martin's Press, 1989)*.



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HOME OFFICE COMPUTING,  
AUGUST, 1989

"I'd definitely recommend this machine to anyone who's considering an AT-class compatible."

COMPUTE'S PC MAGAZINE,  
SEPTEMBER, 1989

"The amount of software included with the HeadStart III is amazing... a system with software and hardware extras that far outweigh its price tag."

INFOWORLD  
AUGUST, 1989

"The HeadStart III is about as close to a no-hassle PC as I've seen."

LOS ANGELES TIMES,  
NOVEMBER 24, 1988

"If it sounds like we're raving about this machine we are."

COMPUTER BUYERS  
GUIDE, 1989



"...It's hard to imagine a better choice."

PC WORLD,  
JUNE, 1989

"Using a HeadStart III is almost as easy as plugging it in."

COMPUTER WORLD  
MAGAZINE, MAY, 1989

## SPECIFICATIONS

**MICROPROCESSOR:** Intel 80286-12  
**SPEED:** 12MHz/8 Switchable  
**BIOS:** Award  
**BUILT IN RAM:** 1 Megabyte  
**EXPANDABLE TO:** 3 megabytes  
**POWER SUPPLY:** 145 watts  
110/220 switchable  
**KEYBOARD:** 101 key PS/2 compatible  
**GRAPHICS:** VGA Autosync  
**FLOPPY DRIVES:** one 5.25" 1.2 megabyte, one 3.5" 1.44 megabyte  
**HARD DRIVE:** 32.1 megabyte, 28 milliseconds, 1:1 interleave  
**BUILT IN INTERFACES:** Parallel, 2-RS232 serial, mouse, joystick  
**EXPANSION SLOTS:** 3 available  
**MOUSE:** Standard  
**SOFTWARE:** DOS 3.3, GW Basic, HeadStart Advanced Environment, Floppy Driver, Framework II, 3-D Graphics, ATI and ComputerEase Tutorial Software, XTree hard disk manager, Publish-It! Chessmaster 2000, Splash, VGA paint program, Bookmark, plus Twist and Shout.



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# Perfect Compromise Between Complex and Weak-Kneed Databases

BY TAN A. SUMMERS

## Borland's Reflex 2.0—It's Big, Strong, and Flexible

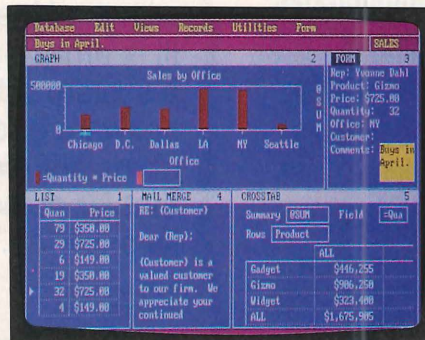
Borland's new *Reflex* 2.0, a comprehensive refurbishing of an already excellent program, is no *dBase IV*. For one thing, it's easy to use. For another, it costs less than *dBase*'s \$795—a lot less. A third difference is that *Reflex* works with only one data file at a time, whereas *dBase* can compare and combine data from several files. That's why, in the jargon of the trade, *Reflex* is called a flat-file database, while *dBase* is relational. Nevertheless, *Reflex* reminds me more of powerhouses like *dBase* than its flat-file counterparts such as *Professional File*.

*Reflex* is big: Files can be up to 32MB in size and contain up to 65,000 records. It's strong: Formulas in calculated fields can utilize any of 80 preprogrammed functions to duplicate many spreadsheet capabilities. It's flexible: There are six different ways to use data, including graphs, summaries, and mail merge. In fact, it's the perfect compromise between software so weak-kneed that it can't process the data I enter and others so difficult to program—and I do mean program—that I can't get the data out.

### SIX WAYS TO WORK WITH INFORMATION

At the heart of *Reflex* are six ways of looking at your data, called Views (although the publisher says that, technically, the program's report capability is not a View, since you can't arrange its windows on-screen).

**Setting up.** Form View displays one record at a time, in a layout resembling printed forms. To create a form, I just type the field names of my choice; descriptive terms—such as Client's Name and System Type for a computer consultant, say—are fine. Although I may want to pop up a dialog box and enter field specifications such as a data type like date or money, this step is unnecessary for many fields because *Reflex* will automatically enter the appropriate specs when I first enter data into the field. I can rearrange my



### Reflex

VERSION REVIEWED: 2.0

SYSTEM REQUIREMENTS: 512K IBM PC, PS/2; hard-disk drive; CGA, EGA, VGA, Hercules; DOS 2.0 or higher; 5.25- and 3.5-inch

PUBLISHER: Borland International, 1800 Green Hills Rd., Scotts Valley, CA 95066; (408) 438-8400

PRICE: \$250

OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

ERROR HANDLING: ★ ★

EASE OF USE: ★ ★ ★ ★

SUPPORT: ★ ★ ★

form for easier data entry anytime I want without harming the records; although if I delete a field name from the field-properties dialog box, it and all related data are gone forever. It's easy to edit data, since *Reflex*'s editing mode comes complete with block commands such as cut and paste. This is especially useful in the memo fields, which can contain up to 8,000 characters—about 1,200 words or a little more than two pages.

**Making lists.** Once I've set up my database and entered information, the other Views let me use it constructively. List View, which can also be used to enter data, spreadsheets the information with one record per row so that I see a screenful of facts simultaneously. I may examine as much or as little of the database as I want, since I can hide extraneous columns. And when I need to organize my data, I can sort on five different fields at a time by typing field names into a dialog box in order of priority.

**Drawing out the essentials.** When I need to see a summary of my numeric data, I use the Crosstabs View, which is in chart form, again similar to a spreadsheet. Here's how it works: As a writer, I like to keep track of which projects pay the most per hour. I list publishers down the left side of the screen and types of projects, such as feature articles and software reviews, across the top. I then ask *Reflex* to fill in summaries of the Hourly Pay data field, showing me at a glance which writing projects are most lucrative.

**Adding graphics.** If I think a graph would display my data better, *Reflex* will produce one. EGA or VGA graphics let me see how the program's nine different fonts, such as script and sans serif, will make my graph look. *Reflex* prints graphs in glowing colors even when used with a monochrome monitor and Hercules graphics card. *Reflex* automatically sizes its line, bar, scatter, and pie graphs in full- and half-page sizes and bigger or smaller sizes too.

**Merging data into documents.** *Reflex* includes its own simple editor, a small word processor complete with word wrap and WordStar-like commands (Ctrl-T erases a word, Ctrl-Y erases a line, and so on). Block commands let me cut text and copy it elsewhere in *Reflex*. I can also delete blocks of text and search and replace.

The editor can process files of up to about 1,000 words, perfect for use with Mail Merge View. And that's where you can get a lot of action from your data. For example, a computer consultant might use a formula that substitutes the appropriate technician's name into a sentence telling clients who will be servicing their new printers based on the information stored in the Printer field of each client's record. While the *Reflex* formulas might look difficult, they're not, since I choose all their terms from menus. Pressing a function key steps me through each record so I can see on-screen how the form letter will look when printed.

**Reporting on your data.** Reports for printouts are just as easy to design. I simply place the cursor where I want each field's data to go, select the field name I want from a pop-up menu, and press Enter. A couple of keystrokes later I can see a sample of my report on-screen. So if the summary is printing on

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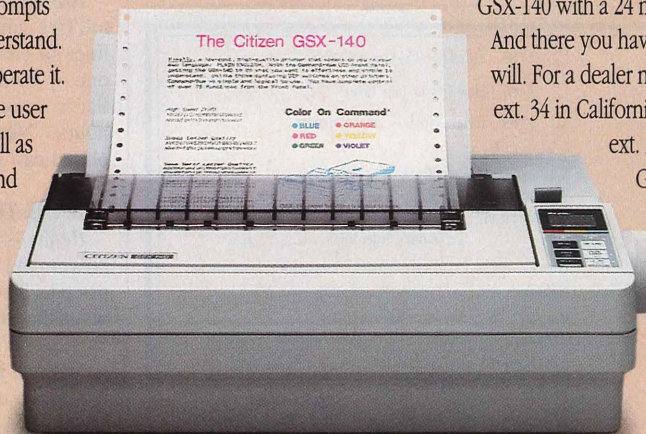
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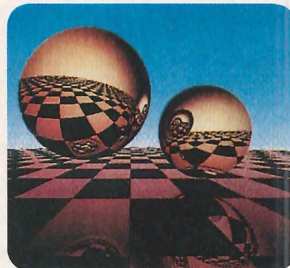


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## DATABASES

the wrong line, for example, I just return to the file-design screen, move my summary to the end of the page, and try it again. Functions such as count, average, and sum are included in menus as well, as are formatting details. In fact, one indication of how easy it is to use *Reflex* is that formatting choices are available throughout the program, not just at print time, which helps make data look good on-screen as well.

### REVIEW FACTORS

*Reflex*'s drop-down menus and pop-up dialog boxes respond well to either mouse or keyboard, and boxes can be opened and arranged on the screen in any order. Function keys enter frequently used commands, such as those to add fields or move to the previous or next record.

Good documentation is important with software as comprehensive as *Reflex*. It comes with a brief Getting Started manual that explains installation and setup and familiarizes new users with the program's menus and function keys. More than 300 pages of tutorials and sample applications fill the Tutorials manual; practice files come on disk.

The 600-plus-page User's Guide has a detailed table of contents that includes tables, diagrams, and functions (the spreadsheet-like mathematical, financial, and statistical functions) as well as basic commands grouped by task. An in-depth index and a fold-out map showing the relationship of all menus and submenus makes it easy to learn any *Reflex* command.

Error handling is good in some areas, not so good in others. *Reflex* won't let me enter incorrect formulas or mismatched data, which is fine, but it also rejects all circular references—sets of fields whose formulas rely on one another for their contents. (This is frustrating, since circular references by themselves may not be incorrect—you can resolve the circle with multiple calculations called iterations. *Reflex* doesn't allow any.)

Borland's technical-support number is not toll free, and I had to wait several minutes for lines to clear before getting to talk to someone. I could have used Borland's CompuServe forum instead, for a reply within 24 hours. Nevertheless, the response to my phone call exemplified good service.

### IT'S THE TOPS

*Reflex* is certainly at the head of its class in power and ease of use, yet it's reasonably priced. The software manipulates data in ways that most other flat-file databases can't. In fact, it's interesting to note that some megabuck relational programs are beginning to adopt the View concept *Reflex* has used for years. If you need flat-file data-processing power without hassle, *Reflex* should top your shopping list. ■

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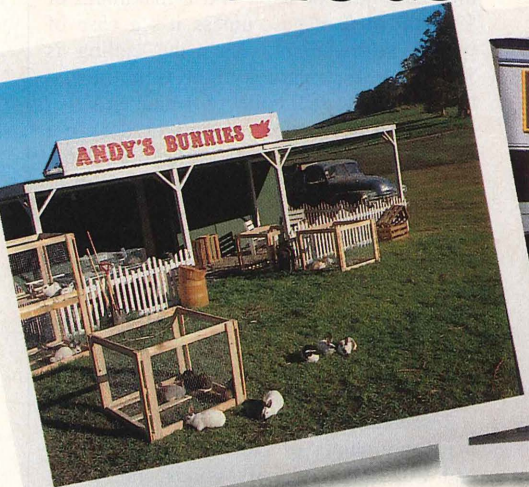
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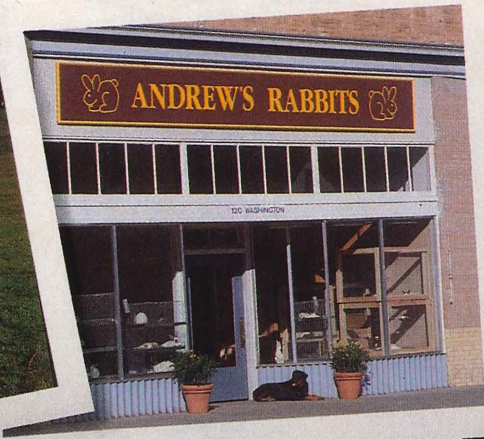
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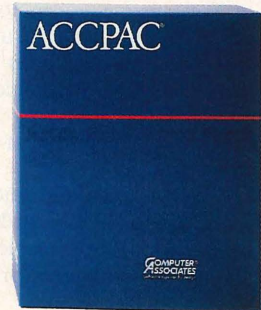


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CIRCLE READER SERVICE 34



# How to Protect Your Products and Ideas

BY RONNIE GUNNERSON

## The ABC's of Trademarks, Patents, And Copyrights

Batman bootleggers hawked Bataphernalia all over the country last summer, but Warner Communications was hot on their heels. Its merchandising arm, Licensing Corporation of America (LCA), conducted raids every day. As exasperating—and expensive—as it was, at least Time Warner had legal recourse under the Batman trademark; had one not been filed, the Batman name would have been fair game.

You probably don't have a product line that evokes mass hysteria, but the product or service you offer is as valuable to you as Batman T-shirts are to LCA, and you deserve the same protection. You can have that protection by registering for your own trademark, service mark, or copyright.

"It's a form of insurance," says Eric Goldberg, president of New York-based Crossover Technologies, a simulation-software company. "There's no reason not to have it."

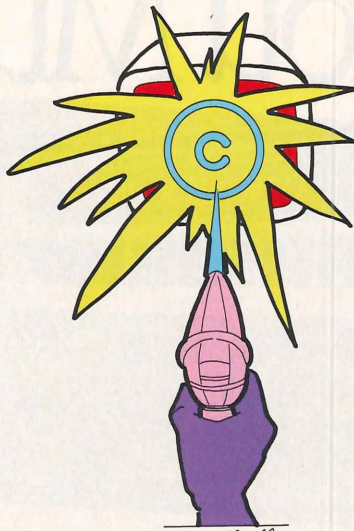
But there's plenty of reason to have it. Goldberg found that out when he was associated with a manufacturer who produced a line of games under the name Paranoia. When a German company proposed a line of its own that infringed on the Paranoia name, a letter of notification was all it took to stop it. Without the trademark and copyright protection, a complaint letter would probably have been ineffective. Unfortunately, they don't offer complete protection. In his book, *Patent It Yourself*, patent attorney David Pressman explains that a patent—as well as a copyright, trade secret, and trademark—is a weapon. It "provides a tool with which you can enforce a monopoly on your creation," says Pressman.

### CHOOSING YOUR WEAPONS

Despite its importance, trademark and copyright protection is so intimidating that many entrepreneurs neglect it. Relax. "It's easy," says Goldberg.

The first step is deciding what type of protection you need.

RONNIE GUNNERSON, a contributing editor, wrote "Audiotape Business Reels in Profits" in the November issue.



**Patents.** There are three types of patents—utility, design, and plant patents—covered by federal law. To obtain any of the patents, the work must be novel. "That means it's new to the world. It's never been conceived of anywhere else," explains Robert C. Lind, Jr., a professor specializing in copyright and trademark law at Southwestern University School of Law in Los Angeles.

The most prevalent is the *utility* patent, which covers tangible inventions like Velcro fasteners and electronic circuits. *Design* patents protect the unique design—purely ornamental or aesthetic—of an invention as opposed to the invention itself. *Plant* patents, not surprisingly quite rare, cover sexually and asexually reproducible plants, such as flowers. Utility and plant patents last for 17 years; and design patents, 14 years.

**Copyrights.** Copyrights protect the original work of authors, composers, programmers, artists, and the like, against plagiarism. According to Lind, "Fixation occurs as soon as the pen or typewriter key hits the paper, or as soon as a work is taped or placed into a computer." Copyright protection endures for the life of the author plus 50 years, 75 years from publication, or 100 years from creation, whichever comes first.

Recent changes in federal law provide protection even if notice of copyright registration does not appear on the work. But attorney Thomas McDermott of Los Angeles-based Rogers & Wells strongly advises that you affix a notice nonetheless. "There may be too many problems trying to enforce

that new provision," he says. If your copyright is registered, you are usually entitled to a minimum of \$500 and a maximum of \$20,000 in damages, unless it's a case of willful infringement. Then the ceiling is \$100,000. If your copyright is not registered, you can still collect for damages."

A word of caution: Copyright does not protect facts or ideas. It protects only the expression of ideas. To protect an idea, Lind advises, "do everything in writing, making sure to state that you are going to disclose this idea, you consider it a valuable commodity, you have a proprietary interest in that commodity, and you are disclosing it in confidence. No one is to use it without paying you, and no one is to disclose the idea to a third party."

**Trademarks and Service Marks.** Trademarks are names or symbols, such as Ivory and Coke, that identify goods and distinguish them from competitors. Service marks, as the name indicates, are used to identify a service. Patented names are often trademarked as well—Xerox, for example. Its photocopying process is patented and its name is trademarked. Under a revised law that took effect in November, you can now register trademarks with the intent to use them. Before, the mark had to have been in use before a trademark could be registered.

Trademarks can last forever, as long as continuous use is shown and registration is renewed every 10 years.

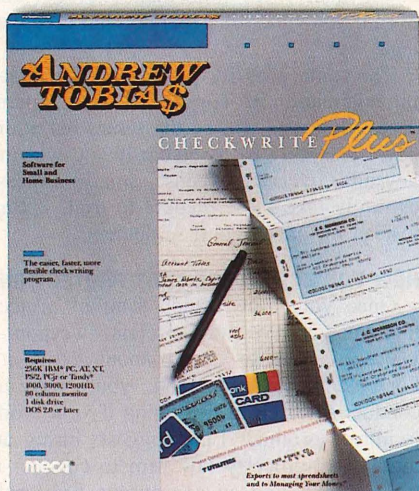
**Trade Secrets.** Covered by state law, trade secrets "run the gamut from the purportedly secret formula of Coca Cola to technical information contained in computer programs," says Lind.

Most computer programs are packaged with licensing agreements on the back stating that when customers open the wrap, they agree not to copy the program. Such statements are trade-secret based and are proving effective, Lind says. Trade secrets, which are perpetual, encompass many aspects of your business that aren't available to the general public, including customer and parts lists. If you rent out your lists, you must include a statement in your contract requiring confidentiality in order to keep your trade-secret status.

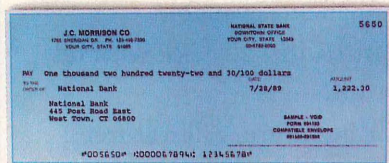
Proving trade-secret damages is difficult, warns Lind. You must prove injury to your business, usually in the form of lost profits. You may be able to get an injunction preventing someone from using your list, but in



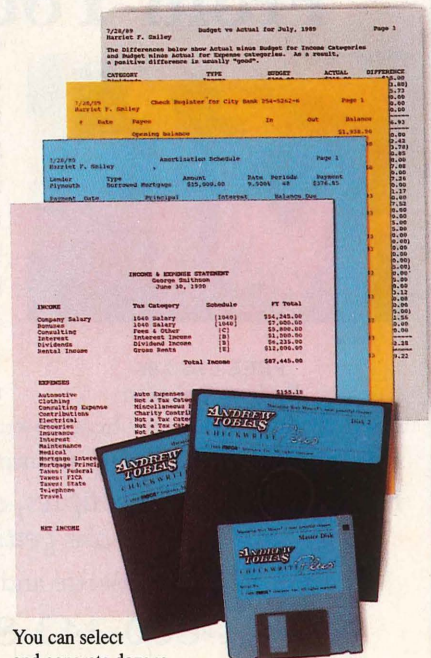
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major cases, it could cost as much as \$25,000 to do so. If you go to trial, you could incur costs more than \$50,000, and even if you win, you generally don't recover legal fees.

The same goes for patent and trademark infringement. In copyright infringement cases, the costs will be the same, but attorneys' fees may be available if you win the lawsuit. Given the expense, small businesses rarely take these matters to trial, opting instead for out-of-court settlements.

## HOW TO GET AND USE THAT PROTECTION

Once you know which kind of protection—or, as Pressman prefers, weapon—you need, how do you go about getting it? For patents and trademarks, you'll have to conduct a search to determine if your work is indeed original. Lind suggests hiring an intellectual-property law firm to conduct it for you. To find an appropriate firm, call your state bar association or refer to the Martindale-Hubbell Law Directory, available in public libraries. Another alternative is a trademark search firm. McDermott recommends Thomson & Thomson, of North Quincy, Massachusetts ([800] 356-8630), which usually charges \$200 to \$300 for the search. Registration with the trademark office costs about \$175. An intellectual-property law firm can handle it for you, or you could follow the instructions in such books as *Patent It Yourself* (Nolo Press; 950 Parker St., Berkeley, CA 94710).

Copyright registration costs \$10 per application and can be handled easily by calling the U.S. Copyright Office hotline in Washington, D.C. ([202] 707-9100), for forms and circulars, and filing them yourself. If you need additional information, call (202) 479-0700.

What should you do when you're fully protected and discover infringement? Lind recommends contacting the offending party yourself, as Goldberg did. Often the infringement is unintentional, so resolution is fairly simple. If, however, you meet resistance, Lind suggests seeing an attorney, who will send a cease-and-desist letter to the offender. If the problem persists, the next step is to proceed with an infringement action, which could result in a preliminary injunction, although procedures vary state by state.

With that in mind, remember that even though patents, trademarks, and copyrights are essential forms of insurance if you have intellectual property to protect, they are insurance and should be treated as nothing more. "Do not be mesmerized by them," warns Goldberg. To protect you, your attorney might advise you to obtain maximum protection, but "you must exercise your business judgment to figure out how much you need," Goldberg says. ■

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CIRCLE READER SERVICE 61



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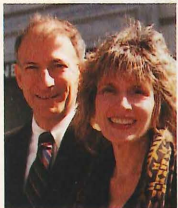
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CIRCLE READER SERVICE 53



# How to Get Rid of an MBA (Marginal Business Attitude)

BY PAUL & SARAH EDWARDS



The most common complaint we hear from home-based business-people is that they aren't taken seriously.

Granted there is still some cultural prejudice against home-based businesses. For example, most banks categorically refuse MasterCard and Visa vendor status to a home-based business; some temporary-employment agencies won't send personnel into a home-based business; and trade suppliers sometimes won't extend credit or give priority to a home-based business. We're confident, however, that as successful home businesses continue to thrive, these institutional barriers will fall.

In the meantime, home-based business owners can take action to reverse their own image problems, which are often self-inflicted. In our August column, "10 Ways to Give Your Home Business a Corporate Image," we outlined steps, ranging from how you answer the phone to the quality of paper you use, to help convey that yours is a serious business. But, if you don't have a serious business *attitude*, no amount of image-building will convince people that you are for real.

If you want to be taken seriously, you have to take yourself and your business seriously. You have to mean business. A Marginal Business Attitude (MBA) will come across in your business dealings and earn you disrespect instead of respect. Here are five typical signs of an MBA, illustrated with composite profiles of people we've known and heard about:

**1. I'll work when and if I want.** A serious businessperson puts business first during business hours. One of the benefits of being your own boss is the flexibility to work when and if you choose, but too many irregular hours, excuses, and exceptions will convey an MBA every time.

For example, an event planner has been



**If you don't have a serious business attitude, no amount of image-building will convince people that you are for real.**

trying to get a contract with a certain corporation for many months. Finally the company calls her on the spur of the moment and asks if she could do a special event for the following week. She tells them she'd love to but she has houseguests and can't do it. Yet she complains that she isn't taken seriously. To be taken seriously, you have to deliver when you have the opportunity.

**2. I don't have the money for that.** Serious business owners realize that money begets money. You invest money to make money. Too often home-business owners bemoan that they don't have the money to do what they need to do. If you take your business seriously, you will use credit and profits to buy the equipment and advertising that will put you on the map.

For example, imagine a home-based seminar leader who aspires to the big-time fee of \$5,000 a day. Although he knows he needs a computer and laser printer for creating top-notch handouts, he hasn't purchased either. He knows he needs exposure, but he doesn't advertise in the trade journals, nor does he publish a newsletter to keep in touch with previous and prospective clients. He wants to do these things but claims he can't afford to. And he complains he doesn't get the respect he deserves.

**3. I can't charge my clients that much.** Serious business owners charge what they

need to charge to succeed. One of the most common mistakes home-based business-people make is to underprice their services. We hear hundreds of stories like this: A home-based newsletter publisher who's just barely keeping his doors open finally hires a business consultant to help diagnose his problems. The consultant tells him to triple the price of his newsletter. The owner was reluctant to charge more for fear of losing his readership. But he followed the consultant's advice and tripled his price. Subscriptions tripled in three months.

To be taken seriously, you must make sure your prices convey value.

**4. Business is tough.** Warren Bennis and Burt Nanus, authors of *Leaders* (Perennial Library, Harper & Row), found one characteristic that leaders, including top executives, shared—"unwarranted optimism." They have the ability to see things as they *can* be, despite how problematical they are at the moment.

We've noticed that serious business owners love the challenge of business and realize that ups and downs are part of the process. They take them in stride and talk about what they're doing rather than what's being done to them. Their attitude is "lucky me," not "poor me." People with an MBA, however, always have a complaint, catastrophe, or slight to report. To be taken seriously,

PAUL & SARAH EDWARDS are the authors of *Working from Home, Everything You Need to Know to Live and Work Under the Same Roof*. They are cohosts of "The Home Office Show," on the Business Radio Network, and they run the *Working from Home Forum on CompuServe* (GO WORK).



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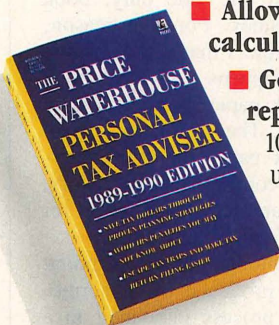
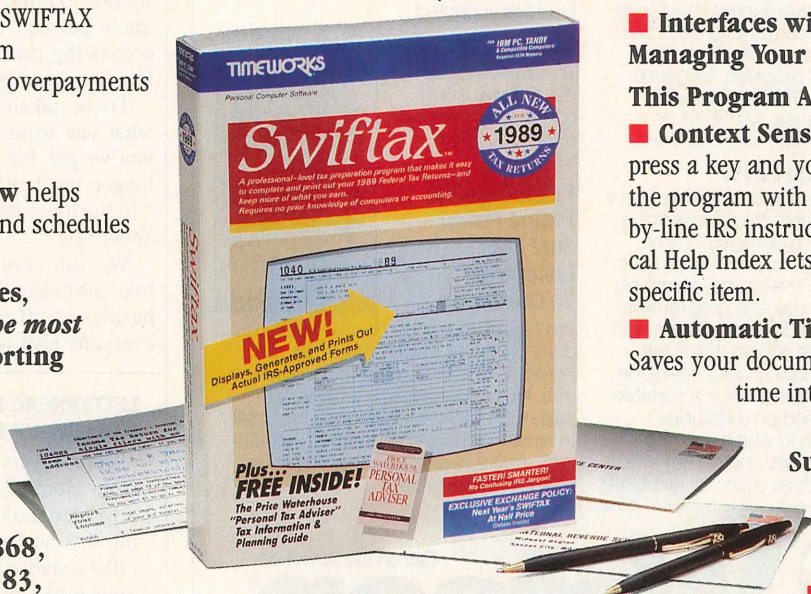
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\*\*Based on the 1986 IRS Adjusted Gross Income ranges.

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The average business person **wastes** 5 to 7\* hours each week on the telephone. That's over 9 weeks a year of wasted time and profits. That's why you need Watson.

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Because Watson invented the category of PC voice mail. Because *PC Magazine* selected Watson Version 1 as "Editor's Choice for Product of the Year in 1984." Because Watson Version 6.23 is a Hayes compatible modem (1200 or 2400 BPS) that runs completely in the background without interfering with other computing functions. Because Watson comes with a 60-day free support program. Because Watson has over 30,000 satisfied users. *And because over 45% of our sales come from user referrals!*

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\*George Walther, *Phone Power* (New York: Berkley Books, 1986).



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you have to expect success.

**5. I do a lot of different things.** Serious business owners define what they do and give it all of their effort. People with MBAs, however, tend to dabble in completely different fields, thinking that if one thing doesn't work out, maybe something else will.

We know an aspiring entrepreneur who falls into this category. Every time we talk with her she's doing something new. First she was a freelance foreign-rights distributor for publishers. Then she was creating greeting cards. Next she was starting a national association. And she frequently complained that people weren't taking her seriously.

Another person we met was a professional organizer. We thought about referring her to a colleague until she added that she really wanted to build her own real-estate practice. She's puzzled that neither her professional organizing practice nor her real-estate business is growing as quickly as she wants.

To be taken seriously, you must decide what you want to do most and give that all you've got for as long as you've got—the longer the better. Signs and ads that read "In business for 25 years" impress us; how about you?

We run across many cases where these five attitudes depress or kill home-based businesses. If you take yourself seriously, everyone else will. ■

### LETTERHEAD PAPER (FOLLOW-UP TO AUGUST)

John Myers, a member of the Working from Home Forum on CompuServe and a former stationery buyer, wrote us saying that he had never heard of 70-pound (70#) stationery paper, which we recommended for letterhead and envelopes in our August column. We looked again at our own 70# Howard Linen to be sure we were right. We were.

Another forum member, Laura Douglas, solved the mystery. It seems there's a difference between "bond" and "book" papers: Bond paper is meant to have printing on one side only; book paper on both sides. For that reason, book paper has fillers that make it more opaque. As it happens, we have book paper; 70# book paper is equivalent to 28# bond paper. The reason some people choose book paper for their letterhead is that it comes in more colors, finishes, and matching cover stock for business cards, folders, and so on.

Myers made another important point: Raised lettering produced by a thermography printing process may melt in a laser printer and stick to the drum. So if you use a laser printer, stick with flat or engraved printing.

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*The LASER 286/2 races through tasks at 6 or 12 MHz. Thirteen feature-packed configurations mean there's a 286/2 for every business or home use.*



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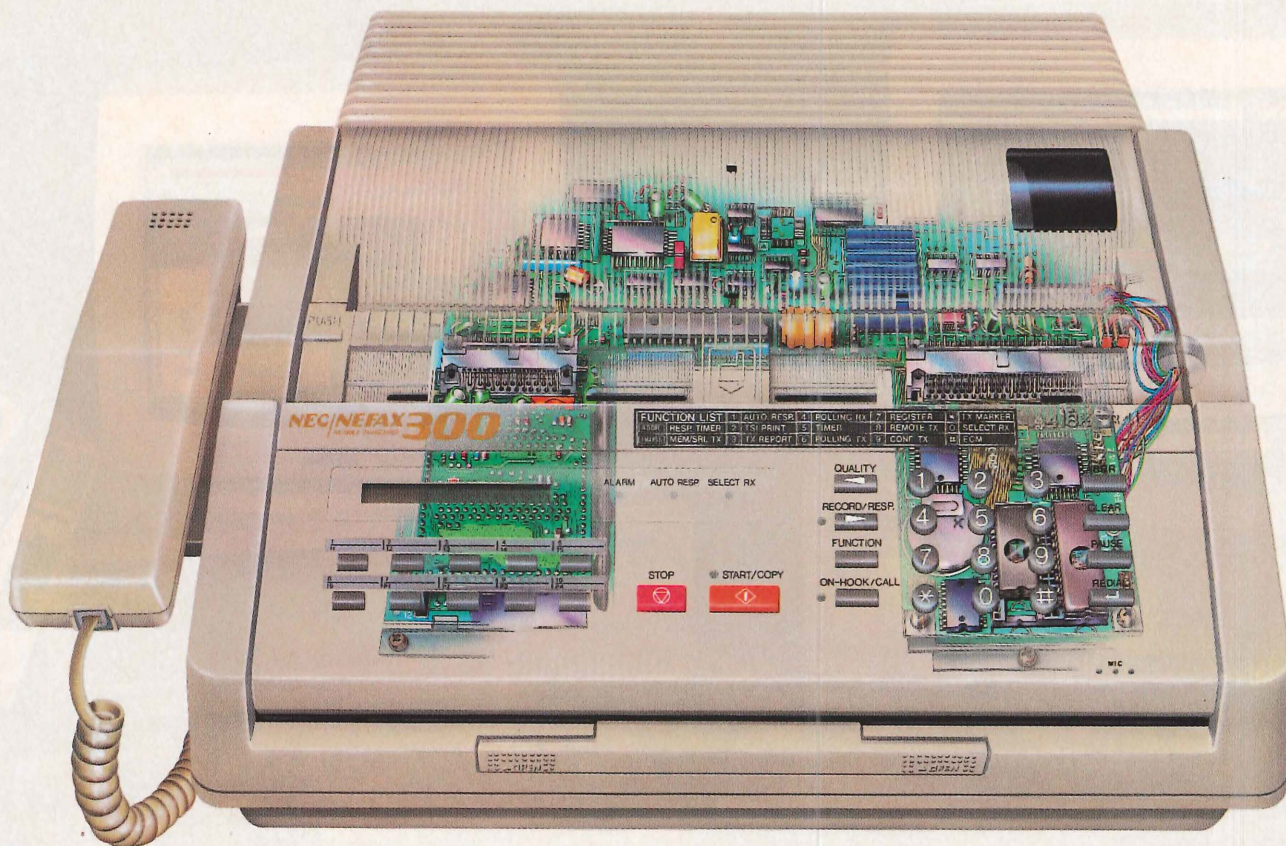
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# YEAR-END SPECIAL

Editors' Picks  
1989:  
The Best and  
Brightest  
Hardware  
Of the Year



**W**e at HOME-OFFICE COMPUTING see lots of equipment and software every year—some of it very good, some of it very bad, and a smattering of it excellent. This year-end review highlights the excellent. We started with a list of all the four-star reviews in our 1989 issues. Then we put our hearts on our sleeves, raised our voices to defend, cajole, persuade, and otherwise make our intentions known, and looked for a quorum of editors' votes to narrow down the list. The products in the following pages stand out because of their prices, features, innovative technology, or some combination thereof. But that's rationale after the fact. The truth is that these are products that we want—or think that you would want to run your business.

—THE EDITORS





## Complete 286-based Computer System at An Affordable Price

### Headstart III, \$3,399

32MB hard-disk drive and VGA color monitor  
Headstart Technologies Co., (516) 482-4255

The Headstart III is a versatile 286-based computer system that comes with a generous assortment of software (including the integrated package *Framework II* and *Publish-It!*, a desktop-publishing program) and a mouse. With a speed of 12 MHz and a bright and clear VGA display, the Headstart is suited for a wide range of general business tasks. The 18-month warranty is backed by an on-site service contract. By any measure, the Headstart is an uncommonly good buy. (*Reviewed in August 1989.*)

## Compaq's Small and Swift 386

### Compaq 386/20e Model 40, \$6,798

40MB hard-disk drive and VGA color monitor  
Compaq Computer Corp., (713) 370-0670

This sleek 386-based computer, a joy to behold and use, is as fast as a jackrabbit. Despite its small footprint, there are two floppy-disk drives, a tape drive, and two hard-disk drives, as well as four expansion slots. Its clear documentation will aid in setup. People doing graphics, large-scale numerical or database work, or multitasking will get their work done in style. You can find faster and less expensive 386 models, but not in such compact housing. (*Reviewed in June 1989.*)



## Laptop With VGA Display Fits Neatly on Airplane Trays

### Compaq SLT/286 Model 20, \$5,399

20MB hard-disk drive  
Compaq Computer Corp., (713) 370-0670



The Compaq SLT/286, which looks like an oversize lunch box, weighs about 14 pounds. It's certainly not the lightest 286 laptop on the market, but it offers two standout features: a VGA display that shows 16 shades of gray and a removable keyboard, which gives the user more flexibility in cramped spaces (like airplane seats). Our reviewer found the LCD display to be the sharpest and clearest around. With a standard 3.5-inch floppy-disk drive and a 12-MHz clock speed, the laptop functions just like a 286 desktop computer. The only compromise is the lack of a separate numeric keypad. (*Reviewed in February 1989.*)

## Speedy and Colorful Macintosh



### Macintosh IIfx, \$7,145

40MB hard-disk drive and color monitor  
Apple Computer, Inc., (408) 996-1010

If the stereo sound and easily accessible slots (two with a monitor installed) don't get you, the color will. It's downright mesmerizing. And the Macintosh IIfx does all the things a business computer should do. You can connect a wide range of monitors—from a large two-page monochrome to a rock-solid 13-inch Sony Trinitron color monitor. The Superdrive—the new Macintosh floppy drive that reads and writes to 3.5-inch MS-DOS disks—is one of the best products of the year on its own. With MultiFinder and 2.5MB of memory or more, you can run more than one program at a time. The IIfx is faster than the SE or Mac II, more versatile than the SE/30, and more compact than the IIfx. It's a winner, as is the newer and faster Macintosh IIfx. (*Reviewed in July 1989.*)



## A Light 286 Laptop

**Toshiba T1600**, \$4,999

20MB hard-disk drive and backlit EGA screen

Toshiba America, Inc., (714) 583-3000

Have Toshiba, will travel. The T1600 is considerably lighter (11.6 pounds) than other 286 laptops and runs at a speedy 12 MHz. With a 20MB hard-disk drive and 3.5-inch floppy-disk drive, you can easily switch back and forth between the Toshiba and your desktop computer. The Auto Resume feature saves your work when the power is turned off; when you switch on again, you're in the same place. The T1600 is impeccably designed, right down to little touches—such as a handle that doubles as a typing hand rest. The only drawback is that the screen display is EGA when today's standard display is VGA. However, you can detach the screen and connect a desktop VGA monitor if you wish. (Reviewed in May 1989.)

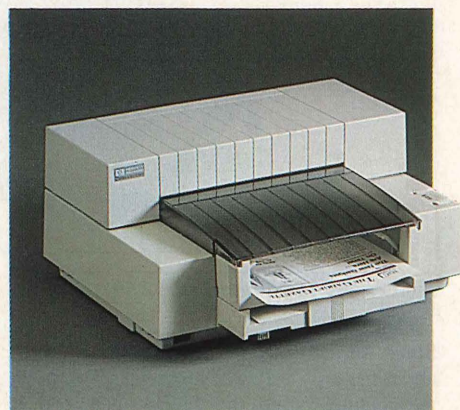
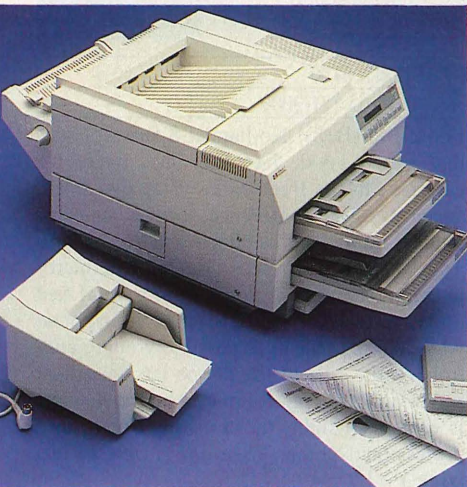


## Laser That Prints on Both Sides of the Paper

**HP LaserJet IID**, \$4,295

Hewlett-Packard, (415) 857-4101

The HP LaserJet IID is a solid workhorse that can automatically print on both sides of a page (duplex printing). Thus, you can print a 10-page file on five pieces of paper without manually turning the pages over. Text output is clean and crisp, and graphics are good, though output may be streaky in large black areas. The LaserJet IID is compatible with software written for the LaserJet Plus and the LaserJet Series II. With room for more than 4MB of memory, 24 built-in fonts (which rotate so they can be used in landscape or portrait modes), and two font-cartridge slots, the LaserJet IID is designed for a business with heavy printing needs. (Reviewed in April 1989.)



## Near-Laser Quality Mac Printing for Less

**HP DeskWriter**, \$1,195

Hewlett-Packard, (415) 857-4101

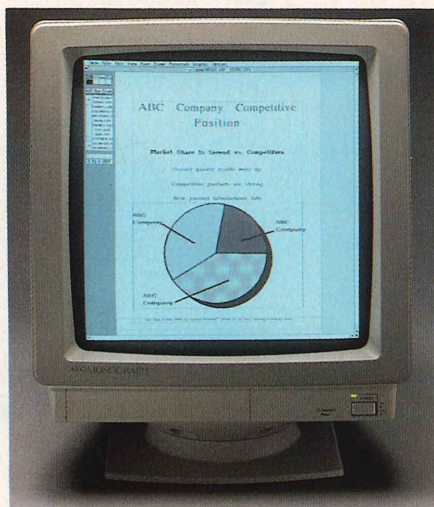
The original HP DeskJet (one of last year's Editors' Picks) and the newer DeskJet Plus for MS-DOS computers thrilled consumers who wanted laser-quality printing at dot-matrix prices. This year, HP's new LaserJet IIP (see following review), which should be selling for close to \$1,000, takes some of the shine off the DeskJet Plus. But in the Mac world, where laser-printer prices are still sky-high, the new DeskWriter is making waves. You'll be hard pressed to tell its ink-jet text output from that of a laser printer. But you'll have no trouble distinguishing the difference in price. Although the resolution (300 by 300 dots per inch) is the same of that of most lasers, the graphic images are not quite as sharp. But with the optional disk-based typefaces, it can reproduce all 11 Apple LaserWriter typefaces in almost equal quality. (See full review in this issue.)

## High-Res Full-Page Monitor Great for Desktop Publishing

**NEC MonoGraph System Monitor**, \$1,999

NEC, (312) 860-9500

What makes this high-resolution monochrome monitor stand out from the competition? The clarity of its display is excellent, especially for viewing very small text (maximum resolution is 1,024 by 1,024). You can see an entire printed page in actual size on-screen, without scrolling up or down. Its 10-by-10-inch screen, larger than most, can be used for portrait or landscape page orientation. Though such a large monitor is useful for all applications, it will make the biggest impact in desktop publishing. (Reviewed in July 1989.)





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## Clear-Sounding Two-Line Portable Phone

**Panasonic KX-T3880**, \$200

Panasonic Co., (201) 392-4119

One of the few two-line cordless phones available, the Panasonic is feature-packed (including three-way conference calling) and sounds clear. A speakerphone at the base means you can still use the phone—even if someone walks away with the headset. The intercom allows you to make calls between the base unit and the handset. A remote channel selector lets you choose the clearer of the two channels during a conversation. While the Panasonic KX-T3880 doesn't include a built-in answering machine as some two-line phones do, it's a useful and liberating tool. *(Reviewed in May 1989.)*



## AT&T's Classy Two-Line Speakerphone



**AT&T 622**, \$120

AT&T, (201) 581-3000

Look, Ma (Bell)! No hands! Speakerphones that sound good, like this one, make for carefree, hands-free work. With two lines, an easy-to-use conference feature, and 16-number memory, this phone will fit well into a variety of home offices. The built-in microphone picks up your voice from several feet away, so you don't have to sit near the phone while talking. Easily accessible volume controls on the side of the phone let you adjust ringer and receiver volume. And the handset is extremely light, the finishing touch on a professional phone. *(See full review in this issue.)*

## Fujitsu's Feature-Packed Fax



**Fujitsu dex 150 PowerFax**, \$2,399

Fujitsu Imaging Systems, (203) 796-5400

Since all fax machines work pretty well, about the only way to choose one is through the features. And the Fujitsu dex 150 is packed with basic and advanced features. Its image-reduction feature lets you reduce documents up to 9.9 inches in width to 8.5 inches before sending. You can ensure confidentiality by coding outgoing documents for

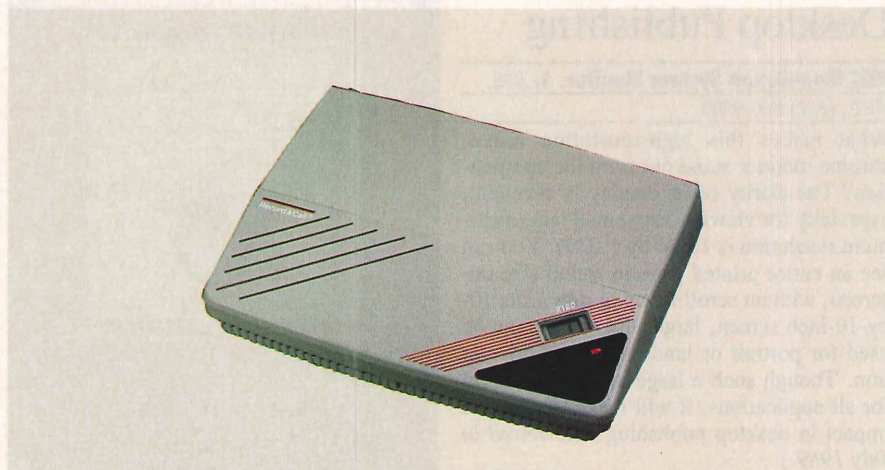
security through a special password procedure. The Fujitsu will store up to 20 pages of simple text in memory (fewer if complex gray-scale images are stored), treating them exactly as if they were hard copies. Another high-productivity feature of this machine is remote operation with codes from any touch-tone phone. Fujitsu caps off the product with superb documentation, a rarity in the fax machine arena. *(See full review in this issue.)*

## Exceptional Two-Line Answering Machine

**Record a Call 2120**, \$120

Record a Call, (213) 603-9393

What this country needed was a good two-line answering machine. Now it's got one. The best thing about this product is not its features, which are fairly standard, but its sleek, compact design, ease of use, and reliability. It can be set to answer one or both lines, and it shuts off when you pick up the phone (so your caller doesn't hear any annoying background sounds). You can leave a different message on each phone line. With a secret three-digit code, you can retrieve messages and change your outgoing message from any touch-tone phone. If there are no messages, the Remote Toll Saver saves you the cost of the call. *(Reviewed in June 1989.)*





## Get Out the Mistletoe!

### Laser Printers Flirt with \$1,000 Price Point

In 1990, you may be able to buy a laser printer for less than \$1,000, something that was unthinkable just a few months ago. And the company leading the charge is none other than Hewlett-Packard, the established leader in the MS-DOS laser-printer market. The suggested retail price on its LaserJet IIP is \$1,495, but retail analysts expect the street price to go as low as \$999.

Other manufacturers, notably Epson and

Toshiba, are setting retail prices at \$1,800. The street price on their models, which have virtually identical features, but are faster than the HP, should be around \$1,300.

Why the welcome drop in prices, which may convince many dot-matrix owners to switch to the laser? In the business world, where faster is generally better, the speed (throughput) of these new lasers is actually decreasing from the standard 8 pages-per-

minute (ppm) to 4 ppm or 6 ppm. For average-size text documents (10 pages or smaller), the effect will hardly be noticeable. Graphics printing, however, will be noticeably slower, so professional desktop publishers will have to stay away from these low-cost lasers. Meanwhile, the rest of us—including occasional desktop publishers—can rejoice.

### Small, Affordable Laser Celebration

#### **HP LaserJet IIP, \$1,495**

Hewlett-Packard, (415) 857-4101

The HP LaserJet IIP is about half the size of the LaserJet Series II printers—and about half the price. Although its print quality is as good as that of any other HP laser printer, the IIP is slower (4 ppm, compared with 8 ppm of the LaserJet Series II). What else do you forsake for the smaller size and price? The print tray holds 50 sheets (other LaserJet Series II models hold 100) and the printer has only one cartridge slot. The printer comes standard with 512K and 14 fonts; memory can be expanded to 4.5MB.



### Epson's Back with Low-Cost Laser

#### **Epson EPL-6000, \$1,899**

Epson America, Inc., (213) 539-9140

Epson, the leader in the dot-matrix printer market, left the laser printer business a few years ago, but is back with this attractive and relatively low-priced 6-ppm printer. Standard memory on the HP-compatible EPL-6000 is 512K (expandable to 4.5MB). It has five built-in fonts, two font-cartridge slots, and a 150-sheet paper tray.

### Welcome New Member to Toshiba

#### **Toshiba PageLaser6, \$1,899**

Toshiba America, Inc., (714) 583-3000

Toshiba adds a second member to its laser-printer family with the PageLaser6, a slower but considerably less expensive version of its PageLaser12 (one of last year's Editors' Picks). The HP-compatible PageLaser6 comes with 512K of RAM (expandable to 4.5MB), eight built-in fonts, two font-cartridge slots, and a 150-sheet paper tray.





# YEAR-END SPECIAL

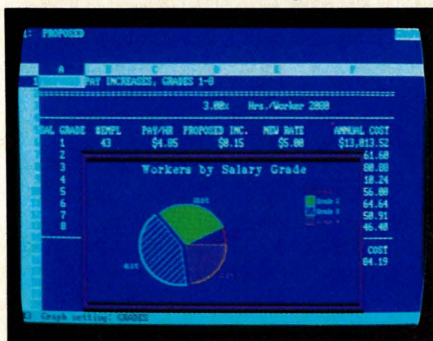
## Editors' Picks 1989: Software That Shines

As with computers and home-office equipment, we've picked these software products as the best of all our four-star reviews in 1989. Our guiding principle, as always, was to find software that makes your work easier or performs jobs you couldn't otherwise do. In fact, much of this software was used to put this and other issues of the magazine together.

—THE EDITORS

### MS-DOS

#### Integrated Program Is Expensive—But a Real Bargain



**Enable/OA v3.0, \$695**

Enable Software, (518) 877-8236

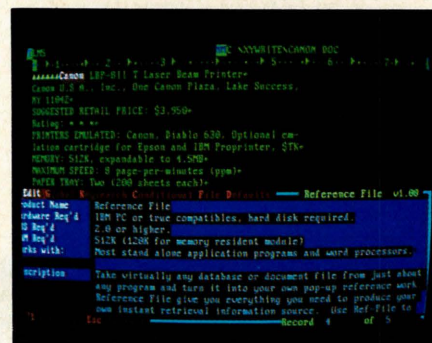
*Enable/OA* (OA stands for Office Automation) is a fancy name for version 3.0 of this outstanding program that keeps improving with age. It combines five applications—word processor, database, spreadsheet, graphics, and communications—into a single, tightly integrated environment. Each module is strong and supports all the major features. Graphs done with the graphics module won't win any design awards, but a separate stand-alone program, *Perspective*, creates eye-catching three-dimensional graphics. *Enable/OA* is expensive, but it gives you five full-featured applications (six if you count *Perspective*). Viewed in that light, *Enable/OA* is a real bargain. (Reviewed in September 1989.)

#### Elegant Memory-Resident Database

**Reference File v1.0, \$89**

Reference Software International, (415) 541-0222

While writing a letter with your word processor, do you often exit to look up an address or phone number stored in a database file? If you do, you know that switching to DOS, into the database, back to DOS, and then into your word processor is time-consuming. *Reference File*, a pop-up database manager, solves that problem. Simply press Alt-F from within any application and the *File* window pops up. You can cut and paste information from *File* into your application and then



make it disappear. Installing and running *File* is so straightforward that even computer novices should have no trouble with it. *Reference File*, widely used at HOME-OFFICE COMPUTING, is a true winner. (Reviewed in August 1989.)

#### Precision Presentations for Nonartists

**Freelance Plus v3.0, \$495**

Lotus Development Corp., (617) 577-8500

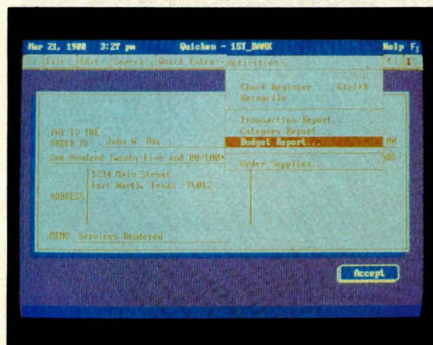
*Freelance Plus* 3.0, the latest upgrade to Lotus's well-endowed charting and drawing package, is a great tool for the non-artist who wants to create visually exciting slide presentations or laser-printed handouts. *Freelance* offers sophisticated drawing tools, including grids and numerous viewing options. You control fonts, curve-smoothing, and arc-drawing. All these functions give you more control over the look of your slides or overheads. To make charts, you enter numbers into on-screen forms and make choices about size, placement, and color. A utility lets you capture screens from other applications to



include in the slide show. Non-artists will find in *Freelance* a precision tool that helps them produce exquisite charts. (Reviewed in November 1989.)



## Fast and Simple Money Manager



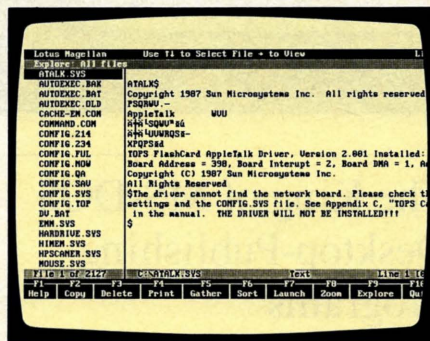
**Quicken v3.0.0**, \$60  
Intuit, (415) 322-0573

The latest version of this popular check-writing and budgeting program is designed to be so intuitive to use that people who are intimidated by most finance software will be setting up budgets without even looking at the documentation. The program is menu-driven so you don't have to learn or remember commands. It provides a link to Check-Free, the national electronic bill-paying system. (See "Checkless Checkwriting" on page 32 of the May 1989 issue.) Quicken is suitable for personal as well as small-business accounts, though it is definitely not an accounting program. Because it places each check in a category of your own choosing, it can help significantly at tax-preparation time. All data is automatically backed up, so you don't have to worry about losing the ranch. A gem. (To be reviewed in 1990.)

## Superior Hard-Disk Organizer and Searcher

**Lotus Magellan v1.0**, \$195  
Lotus Development Corp., (617) 623-6572

When it comes to searching for and displaying the contents of your files—and then reorganizing the information—*Magellan* is truly exceptional. When you don't know which file has the information you want or you need to see all the files that contain a particular reference, *Magellan* really shines. Just give it a string of letters or words to search for. Compared to other hard-disk search programs, *Magellan* is blazingly fast. But the real value of the program is its ability to gather text from various files created in any application and lump it into new files and directories. *Magellan* is exceptionally well designed, with easy-to-understand menus, dialog boxes, and extensive context-sensitive help available when you need it. It deserves a spot on your hard disk. (Reviewed in November 1989.)



## Word Processor That Rivals Desktop-Publishing Programs

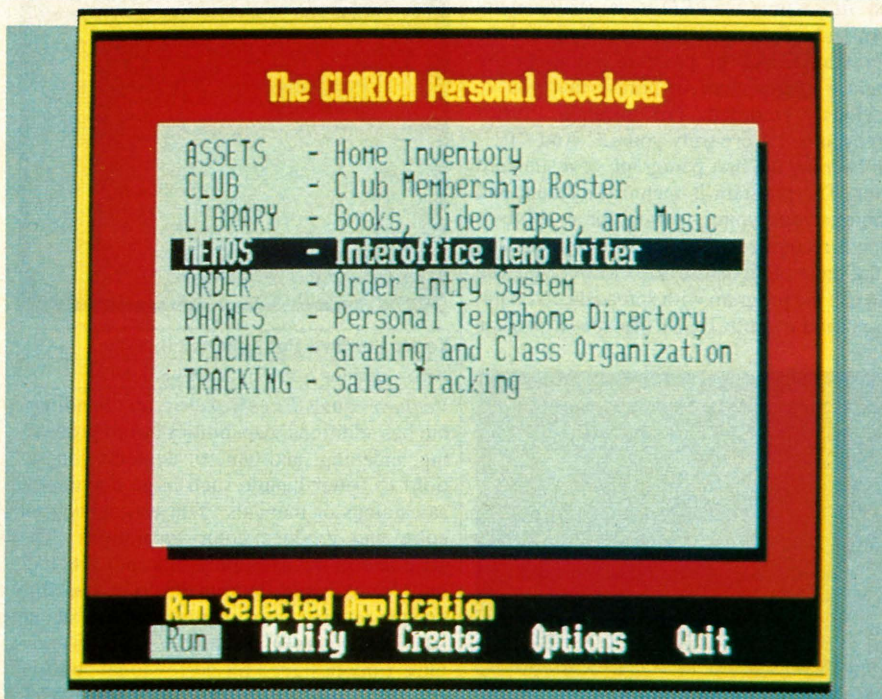
**WordPerfect v5.1**, \$495  
WordPerfect Corp., (801) 222-4020

The new version of the venerable MS-DOS word processor has some exciting advanced features. It offers optional pull-down menus and mouse support, which help make a complex program easier to use. It has spreadsheet and graphics links, so that any spreadsheet numbers or graphics in your word-processing file are automatically updated if you make changes within the graphics or spreadsheet program. *WordPerfect* excels at producing multiple-column documents; you can even write and edit with text in columns. You can create tables to use as charts; and you can construct formulas, making the program useful to many academics and scientists. You can use any typeface your printer provides. The program handles spacing impressively. The publisher has several toll-free numbers, each dealing with different types of questions. (Version 5.0 reviewed in May 1989; v5.1 to be reviewed in 1990.)

## Tool That Lets You Create Menu-Driven Customized Databases

**Clarion Personal Developer v2.0**, \$199  
Clarion Software Corp., (305) 785-4555

Even if you've never written a single line of code—and never plan to—*Clarion Personal Developer* lets you create a personalized phone directory, an inventory-management system, a custom order-processing program, and nearly any other database application. With the latest version, you can even bring in dBase data files. The applications you create are menu-driven, which helps make them more obvious to operate, and you can pass them along without charge for other people to use, even if they don't own *Clarion*. All in all, *Clarion* is exceptional. It's not simple, but with the tutorials, examples, on-line help, and excellent reference manual, it's relatively easy to learn to use. (Version 1.0 reviewed in July 1989.)



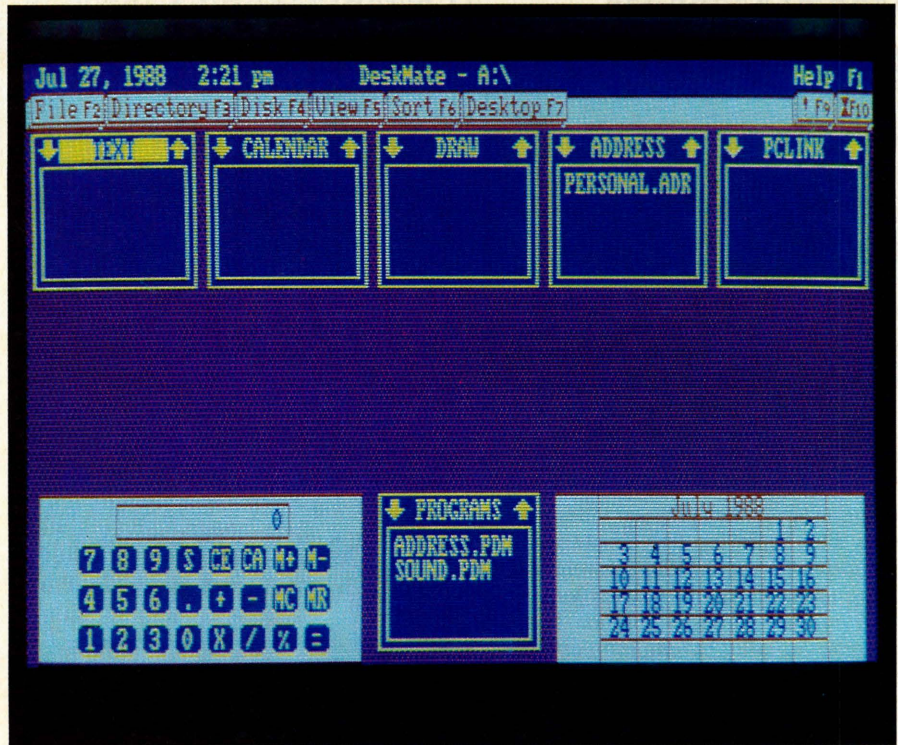


# Smooth Point-and-Click Operating Environment

**Tandy DeskMate** v3.3.1, \$100

Tandy Corp., (817) 390-3011

Tandy's *DeskMate* was introduced several years ago as a set of simple programs (calendar, text editor, and so on) to handle basic office tasks. The program was later enhanced and became a simplified *Windows*-like desktop operating environment from which you could launch programs with the click of a mouse without using standard DOS commands. One of its main virtues is that it runs on a standard PC and doesn't require a lot of memory or speed to work well. Then, Tandy licensed *DeskMate* to third-party developers. The dividends are finally kicking in. This year, *DeskMate* versions of Lotus 1-2-3, Q&A Write, *Quicken*, and *PFS: First Publisher* all hit the market. This widespread acceptance by major software publishers really puts *DeskMate* on the map as a good and much less expensive alternative to *Windows* or *Presentation Manager*. And for people with a standard PC (based on the 8088 or 8086 microprocessor), it's the only real choice for a graphic interface. (See *Up Front* in this issue.)



## A Route to Time-Saving Shortcuts

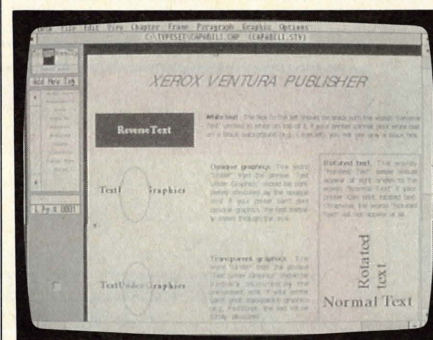
**PRD+** v2.0, \$90

Productivity Software International, Inc., (212) 967-8666

The full name of *PRD+* is *Productivity Plus*, and it lives up to its name. Type a short abbreviation and the program automatically enters a longer word or phrase that you've previously recorded. For instance, "vty" can become "Very truly yours." And "P1" can become the first paragraph of a standard letter. The program is memory resident and monitors your typing, waiting for an abbreviation it recognizes. Though word processing is the most obvious use for *PRD+*, you can also use the program with spreadsheets, databases, and even in DOS. (Reviewed in June 1989.)



## The King of MS-DOS Desktop-Publishing Programs



**Xerox Ventura Publisher** v2.0, \$895

Xerox Desktop Software, (800) 832-6979

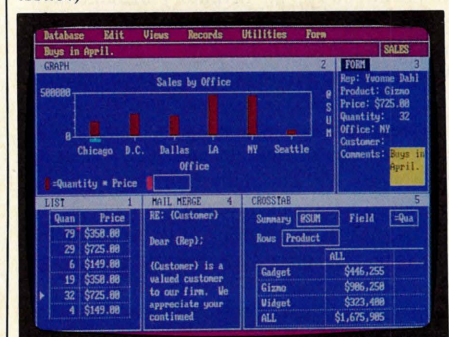
*Ventura* equals *PageMaker* in text handling, but has additional capabilities (word processing, indexing, and table-of-contents generation) to better handle such large documents as catalogs or manuals. You can apply spot color and produce color separations. The style sheets are extremely thorough, including, for example, automatic drop caps (the outsize letters that sometimes appear at the start of chapters or articles). *Ventura* is complex, truly designed for professional publishers. (Reviewed in January and April 1989.)

## It's the Tops—A Strong and Flexible Flat-File Database

**Reflex** v2.0, \$250

Borland International, (408) 438-8400

*Reflex* is certainly at the head of the class in the flat-file database category and approaches relational powerhouses such as *dBase* in some areas. It can handle huge files, up to 32MB, but it's not a daunting program that requires programming. You can view your data six different ways. The documentation is a big help in using this comprehensive and well-priced program. (See full review in this issue.)



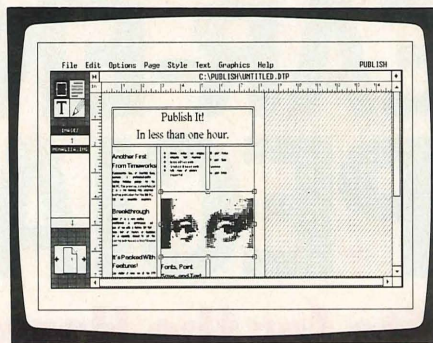


# Superb Desktop-Program Publishing For Short, Simple Documents

**Publish-It!** v2.0, \$200

Timeworks, Inc., (312) 948-9200

The best of the intermediate-level MS-DOS



programs for all-around performance and price, *Publish-It!* equips you with a well-rounded array of layout, typographical, and word-processing controls. It allows an unlimited number of imported graphics and stories per document and provides master pages, so each page can have an identical layout. Though not appropriate for publications requiring color or photographs, *Publish-It!* is a less expensive and less complex route to creating simple printed materials than most professional publishing programs. (Reviewed in April 1989.)

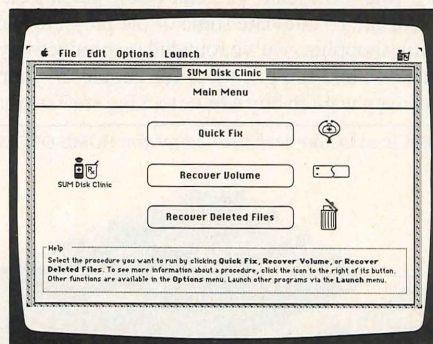
## MACINTOSH

# The Great Macintosh Hard-Disk Protector and Insurance Policy

**Symantec Utilities for Macintosh (SUM II)**  
v2.0, \$100

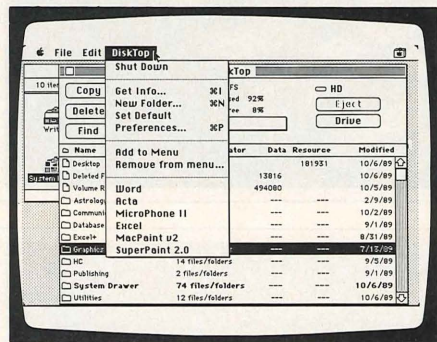
Symantec Corp., (408) 253-9600

Several utilities unified by an easy-to-use



interface make *SUM II* an indispensable addition to a system. It helps recover data if your hard disk crashes. *SUM II* also optimizes files by rearranging them in contiguous blocks (so they will load faster), creates separate volumes on a hard disk, diagnoses disk problems, and more. The latest version adds backup utilities and file encryption. Utilities, like insurance policies, aren't exciting products—until you need them. And when you do you might as well have a good one. This one is highly recommended. (*SUM v1.0* reviewed in February 1989.)

# Valuable Macintosh Desk Accessory



**DiskTop** v4.0, \$100

CE Software, (515) 224-1995

This desk accessory greatly expands on the Mac's desktop capabilities, letting you copy and delete files, say, from within nearly any program. But that's not all: *DiskTop* can find any file or launch an application from a customizable menu, so you can jump quickly from program to program. Easy to use and fast, with power for advanced users, this program will save computer users a lot of time, keystrokes, and mouse drags and clicks. The latest version incorporates the hard-disk searching program *Gofor* for fast text searches. (*DiskTop v3.3* reviewed in April 1989.)

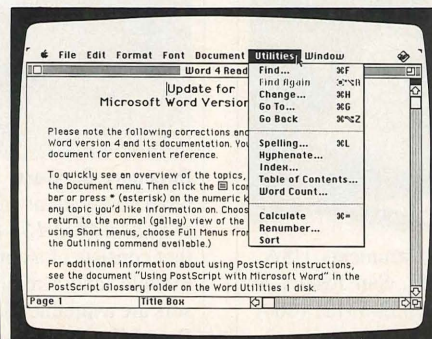
# State-of-the-Art Word Processors

**Microsoft Word** v4.0 (Mac), \$395

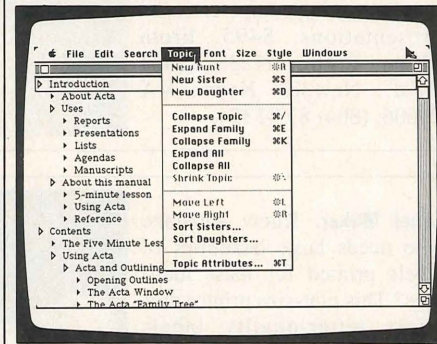
**Microsoft Word** v5.0 (IBM), \$450

Microsoft Corp., (206) 882-8080

Both Macintosh and MS-DOS versions are excellent word processors, ideal for any writing task. If you want enough word-processing wizardry to create multicolumn, illustrated documents with an array of typefaces, lines, boxes, shaded areas, and graphic images, just say the *Word*. You can create respectable newsletters or business reports, thanks in part to *Word's* great style sheets. *Word* is simply a state-of-the-art word processor. (To be reviewed in January 1990.)



# Versatile Macintosh Outliner



**Acta Advantage** v1.0, \$129

Symmetry Corp., (602) 844-2199

*Acta Advantage* takes wonderful advantage of the Mac's graphic, mouse-based interface to make outlining operate smoothly. For instance, if after typing a new entry you realize it should actually be listed under the main heading, all you need do is drag the new entry to its appropriate position on-screen. *Acta* comes packaged with both stand-alone and desk-accessory versions (the stand-alone gives you more control over type styles), which makes it versatile. (Reviewed in August 1989.)



# YEAR-END SPECIAL

## Great Gifts for the Home Office

BY MARIE ALVICH

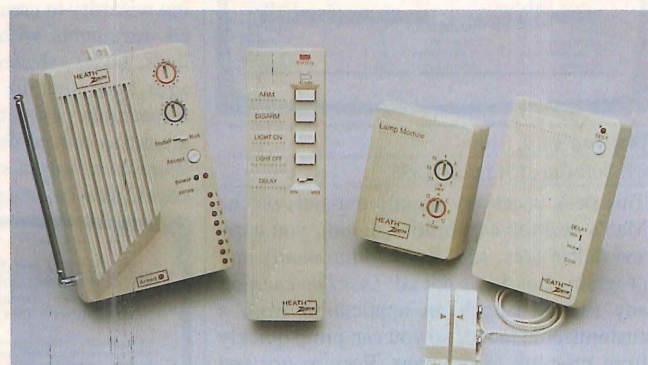
It's that time of year again—parties, gift buying, family gatherings, and so on—the holiday spirit is beckoning us all. No matter how pressing your workload, you can't help getting caught up in the holiday season. To alleviate some of the pressure and save you hours of frantic shopping, we've rounded up productivity boosters, office brighteners, and fun gift ideas for people on your shopping list. You may even want to buy a few stocking stuffers for yourself.

MARIE ALVICH is associate technical editor for HOME-OFFICE COMPUTING.

**Look, No Wires!** Here's a wireless, 100-key, full-function keyboard for the salespeople on your shopping list. *Toteboard*, which uses infrared technology, is portable, compact, and can be operated with one hand. And it won't confine them to their computer systems when they're making computer-based presentations. \$495. From nView Corp., 11835 Canon Blvd., Newport News, VA 23606; (804) 873-1354.



**Label Maker.** Know someone who needs large quantities of labels printed for mass mailings? This pint-size printer produces letter-quality labels quickly and easily. Using its own software, the *Smart Label Printer* creates labels for envelopes, folders, disks, Rolodex cards, address books, and more. Works with any Macintosh, IBM PS/2, or IBM PC-compatible computer with a serial port. Unit comes with 130 labels; additional labels are available for \$13 a pack (two rolls of 130 labels each). \$250. From Seiko Instruments USA, Inc., PC Products Division, 1144 Ringwood Ct., San Jose, CA 95131; (408) 922-5900; (800) 274-4277; (800) 553-5312; (800) 553-5315 in California.



**Outsmart Burglars.** Protect equipment, valuable documents, and other costly items from robbers. The Heath Zenith *Wireless Security System Model SS-6100* is a user-installable home security system that consists of a control center, a door and window sensor, a lamp module, and a remote control. Additional door and window sensors are available (\$80 for three). \$100. From Heath Zenith, Reflex Brand Group, Hilltop Rd., St. Joseph, MI 49085; (616) 982-5642.

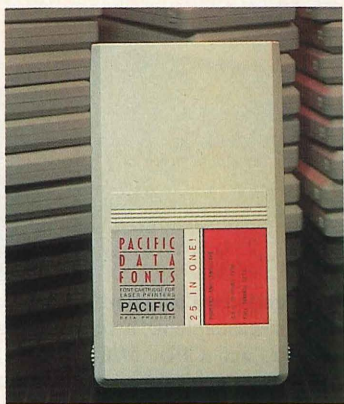




**Portable Word Processor.** Some business people who need to word process on the go don't want to invest in a second computer system just for travel. Smith Corona's *Laptop Personal Word Processor 7000LT* is an economical solution for those who need a word processor and perhaps a simple spreadsheet for business travel or even for their offices. This laptop word processor comes complete with a letter-quality daisy-wheel printer and built-in electronic dictionary and thesaurus. The unit weighs just 6.5 pounds; add the printer, and the total is 17 pounds. With a 1200-bps Hayes-compatible modem, users can transfer data to another PWP 7000LT or to a personal computer. Options include a printer sheet feeder (\$200), a carrying case (\$50), a rechargeable power pack (\$80), an external charger (\$13), and a spreadsheet package called *CoronaCalc* (\$60). \$899. From Smith Corona Corp., 65 Locust Ave., New Canaan, CT 06840; (203) 972-1471.

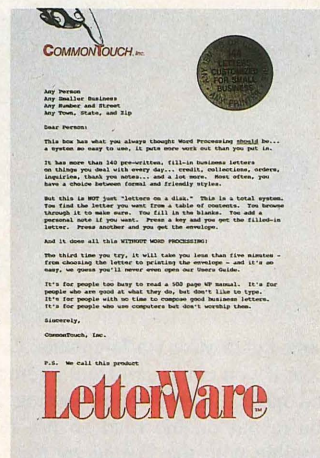
#### More Fonts for Less Money.

Font-hungry LaserJet users will love *25 Cartridges in One!*, a single cartridge that offers 172 fonts at an unheard-of price. This font cartridge is compatible with the LaserJet Plus, 500 Plus, and the Series II and IID, as well as the Canon LBP-8II and the Olivetti PG-108 and PG-208. \$399. From Pacific Data Products, 6404 Nancy Ridge Dr., San Diego, CA 92121; (619) 552-0880.



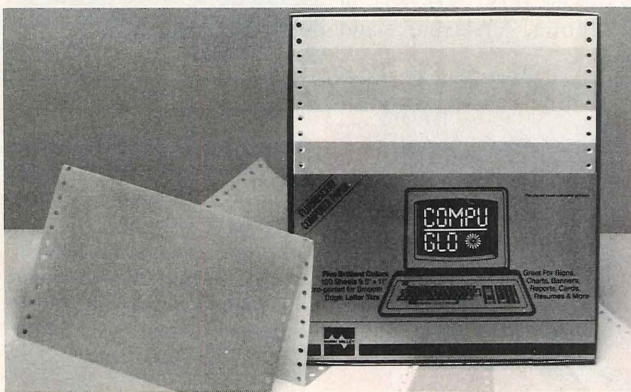
**Keep Calling Costs in Check.** Small-business owners, consultants, and anyone else who has to track phone calls will benefit from the *Telephone Activity Monitor Model 88-U*. It records the starting and ending times of calls, as well as the date and current time. Has an LCD and a built-in printer. \$195. From Electrosales Corporation of America, Inc., 1555 Brunswick Ave., Lawrenceville, NJ 08648; (609) 393-7474.

**Letter-Writing Made Easy.** Many business people feel that they're experts in their field, but when it comes to writing business letters, they cringe. Give an unsure writer *LetterWare*, an easy-to-use, fill-in-the-blank software system that provides 144 letters for everyday correspondence. Includes business inquiries, proposals, thank-you notes, and much more. For IBM PCs or compatibles. \$79. From CommonTouch, Inc., P.O. Box 21, Newton, MA 02159; (800) 762-6789; (617) 964-7740.



**A PC Guard.** Deter computer theft with *AlarmCard*—an IBM PC/XT/AT add-in board that lets out an ear-piercing alarm when the computer is moved. No locks, cables, or chains. Software included. \$120. From AlarmCard, 14700 N.E. Eighth St., Suite 205, Bellevue, WA 98007; (206) 747-0824.

**Brighten Up the Day.** This gift will make lasting impressions. *Compu-Glo* fluorescent computer paper is ideal for bulletins, announcements, fliers, banners, and any other attention-getting notices. Available in red, canary, orange, green, and pink. \$15 for a box of 120 sheets (24 sheets of each color). From Miami Valley Paper Co., 413 Oxford Rd., Franklin, OH 45005; (800) 543-7905; (513) 746-6451.





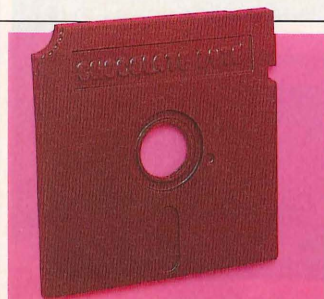
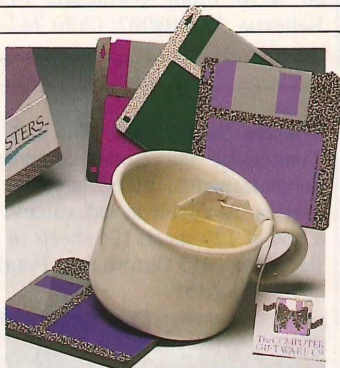


**Home Automation via Telephone.** On cold winter days wouldn't it be great if you could call from a remote location to turn up your heat and have a warm room waiting for you? Or start dinner while you're out on the road so it's ready when you get home? It's possible with the *Telephone Responder Controller*. By plugging the Telephone Responder Controller into any AC outlet and hooking it up to a standard phone jack, users can control up to eight lights and appliances connected to special modules. \$50 for main controller; \$15 for each module. From X-10 (USA) Inc., 185A LeGrand Ave., Northvale, NJ 07647; (201) 784-9700; (800) 526-0027.

**Power Calculating.** The *Business Consultant II*, Hewlett-Packard's top-of-the-line business calculator, can create graphs and diagrams on its 23-character-by-4-line LCD. Some of its other features include 128K of ROM and 6.5K of RAM, currency and measurement conversions, amortization and depreciation, and cash-flow analysis. \$175. A \$135 printer is also available. From Hewlett-Packard, Inquiries Manager, 1000 Northeast Circle Blvd., Corvallis, OR 97330; (503) 757-2000.



**Disk Coasters.** For the computer lover who has everything: colorful and distinctive coasters that look just like 3.5-inch floppy disks. These disks are guaranteed not to trash a file. Set of six. \$14.95. From The Computer Giftware Co., 521 State St., Glendale, CA 91203; (800) 543-7326; (818) 500-7857 in California, Alaska, and Hawaii.



**A Disk That's Good Enough to Eat.** Give away some big bytes of this 5.25-inch disk. *The Original Chocolate Byte* is a great gift for any chocolate lover. \$13. From the Chocolate Software Company, Inc., P.O. Box 920, Orem, UT 84059; (800) 332-2983; (801) 224-9500 in Utah.



**A Mouse of a Different Color.** Add color to someone's desktop with *Color-Mouse*, a little critter that comes in red, green, yellow, blue, or beige and is Microsoft compatible. Works with IBM PC/XT/AT and compatibles and IBM PS/2. \$79.95. From Vatek USA Inc., 4636 Mac Beth Ct., Fremont, CA 94555; (415) 794-6721.



**A Clock . . . a Radio . . . an Air Freshener?** Give someone the time, Sinatra, and fresh air, in a compact cube. This AM/FM clock radio has a built-in air purifier and ionizer to help eliminate stale air, smoke, dust, and other airborne irritants. Available in gray or black. \$150. From Soundesign Corp., Harborside Financial Center, 400 Plaza Two, Jersey City, NJ 07311; (800) 888-4491; (201) 434-1050.



**True Blues for Computers?** For fashion-conscious computer owners into the casual look, here are denim jeans for a monitor, keyboard, printer, and CPU. *MICROjeans* are 100 percent cotton denim dustcovers made for most brands and models of computers. \$15 to \$40. From Computer Fashions Co., P.O. Box 5178, Richmond, CA 94805; (415) 236-5671.

**Personal Financial Consulting.** *The Entrepreneur and Small Business Financial Problem Solver*, written by Dr. William A. Cohen, leads readers through the legal aspects of going into business and tells them how to acquire a loan, buy an existing business, get credit, and much more. Directories of important agencies, investment companies, and other resources are also included. \$14.95. From John Wiley & Sons, Inc., 605 Third Ave., New York, NY 10158; (201) 469-4400.

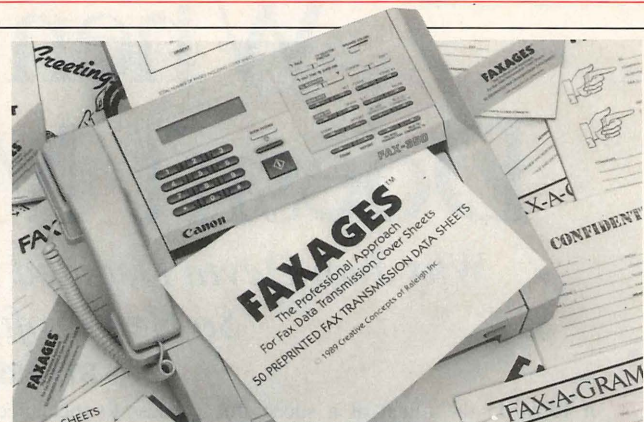
**THE  
ENTREPRENEUR  
& SMALL  
BUSINESS  
FINANCIAL  
PROBLEM  
\$OLVER**

William A. Cohen



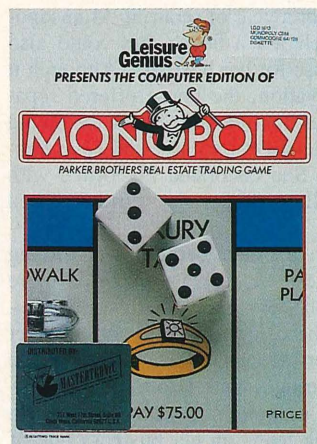


**Yours Truly.** Give a friend the only magazine for people who work from home. HOME-OFFICE COMPUTING is crammed with advice on using technology to get the most out of a home-based business. A gift subscription costs only \$9.99. Call (800) 288-7812 or fill out and return the enclosed gift card in this issue.



**Faxages.** This holiday season give business associates these fun and eye-catching Faxages, fax cover-sheet pads (50 sheets per pad) that come in many styles. Fax messages are sure to get noticed. \$4. From Creative Concepts of Raleigh Inc., 12621 Waterman Dr., Raleigh, NC 27614; (919) 847-8282.

## Just for Fun

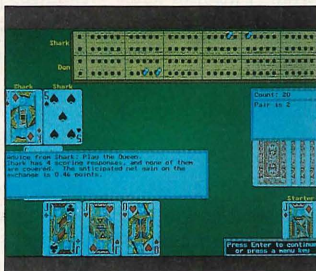


**Board Games.** Just about everyone has played Monopoly, Risk, Scrabble, or Clue. If you have technophobes on your shopping list, you can ease them into the world of computer entertainment with something familiar. All are available in most computer formats. \$30-\$40. From Virgin Mastertronic International Inc., 18001 Cowan St., Suite A, Irvine, CA 92714; (714) 833-8710.

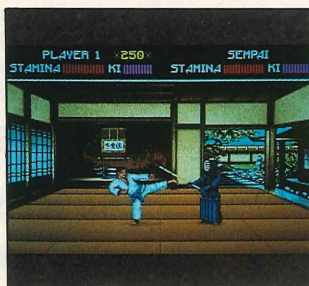
**Solo Card Game.** Whether it's Vegas-style or the kitchen table variety, there are computer-card games for everyone. *Solitaire Royale* (256K IBM, 384K Tandy, 512K Amiga, 512K Mac) features eight varieties of solitaire as well as three kids' versions. The graphics are

beautiful, allowing you to choose from 10 designs for card backs and five for faces. \$35. From Spectrum HoloByte, 2061 Challenger Dr., Alameda, CA 94501; (415) 522-3584.

**Racing-Car Action.** Car lovers can drag race through downtown San Francisco in one of several Corvettes. With *Vette!*, 512K IBM owners maneuver through busy traffic and dodge pedestrians. Head-to-head play is included. \$50. From Spectrum HoloByte, 2061 Challenger Dr., Alameda, CA 94501; (415) 522-3584.



**Card Games for the Gang.** This computer card game, *Gin King/Cribbage King* (384K IBM PC, PS/2), supplies up to seven computer opponents, who offer game hints. The package comes with a cribbage board and a deck of miniature Bicycle cards. \$60. From The Software Toolworks, 19808 Nordhoff Pl., Chatsworth, CA 91311 (617) 876-2500.



**Martial Arts.** *Budokan* (512K IBM) starts players off as white-belt students and moves them through the martial-arts ranks until they are ready for the tournament at Budokan in Japan. Players will learn a number of different styles and weapons, and they can master more than 30 different moves for each martial art. \$40. From Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404; (415) 571-7171.

**More From Indiana Jones.** Indy fans will love this one! *Indiana Jones and the Last Crusade* (384K IBM, 512K Amiga, 512K Atari ST) follows the film closely but lets players choose paths Indy didn't take. It can be played as an action or adventure game, has great graphics, and offers an ending that may be better than the movie's. \$50. From Lucasfilm Games, P.O. Box 2009, San Rafael, CA 94912; (415) 662-1745.

**Chess.** Computer chess games have come a long way in the last several years. The recently released *Sargon 4* (640K IBM, 512K Mac) leads the pack. With 16 levels of difficulty, on-line help, tutorials, 100 great matches from chess history to watch and analyze, and superb graphics, it's the perfect gift for the serious chess player. \$50. From Spinnaker Entertainment Group, One Kendall Sq., Cambridge, MA 02139; (617) 494-1200.



**Sound for MS-DOS.** Those of us with MS-DOS computers are constantly complaining about the poor sound quality of most computer games. An add-in sound card is a sure-fire remedy. The most widely supported card is probably the *Ad Lib Music Synthesizer Card*. It can produce 11 voices and comes with music-composition and playback software. \$180. From Ad Lib, 220 Grande-Allée East, Suite 960, Quebec, Ontario G1R2S1; (418) 529-9676.



# When Bigger Doesn't Mean Better

*Why Judi Devin Decided to Keep Her Business Small  
So Her Profits Could Grow*

BY KAREN L. NOVAK

In 1979, in the midst of a successful career, Judi Devin decided to start a business of her own. So she hocked her engagement ring, bought business cards, letterhead, and a typewriter, and installed a business telephone line by the desk in her living room. Soon she was making photocopies in the bedroom and creating slide shows on the kitchen counter. Seven months later, Devin bought back her diamond solitaire. Today her instructional media business, Medium Well Done, creates training materials (including booklets, slide shows, and videotapes) for such clients as IBM, General Mills, and Honeywell Bull. She runs the business from a 1,200-square-foot office on the first floor of her three-story Minneapolis home.

Devin, 43, entered the corporate arena during the seventies and finally became the first female department head at Control Data Corporation's The Education Company. Although she was promoted yearly, she eventually hit the corporate glass ceiling and realized that she would never advance to upper management. Restless, she began to plan her escape.

Armed with her management experience at Control Data, advanced degrees in education, and a background in teaching, Devin decided that she would strike out on her own. After she had lined up two clients (one of which was Control Data), she quit her job. Since her old department was being reorganized, she was able to lure away some of her staff—whom she hired as contractors—with her former employer's blessing.

Devin named her fledgling business Medium Well Done, a twist on the sixties saying, "The medium is the message."

"When the medium is well-done, the message is well-done," says Devin, paraphrasing Marshall McLuhan, author of *Understanding Media*. "I shortened that to Medium Well Done, figuring that if the business failed, I could always start a restaurant."

By networking with other small businesses at the outset, Devin obtained immediate

access to specialized services such as editing, book layout, and computer programming. To widen her network of contacts and pick up business know-how, she joined a local chapter of the National Association of Women Business Owners (NAWBO).

Five Macintosh computers, an IBM PS/2 computer, and a slew of video equipment allow Devin to complete much of Medium Well Done's design, video, and desktop-publishing work in-house. This means a big savings in time and money that would be spent on outside typesetting and other production costs. Says Devin of her office set-up: "The technology has allowed me to do more work, more efficiently, in less time."

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**"The technology has  
allowed us to do more  
work, more efficiently, in  
less time."**

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When I do printed materials, or even scripts, I'm always rewriting. I used to have to do all that rewriting on the typewriter. Now I'm being more efficient. The company can handle more projects." Medium Well Done was well on its way to becoming a viable business.

## MAKING THE IDEAL REAL

The road to success, however, was not without its stumbling blocks. "As the business grew," she explains, "I leased commercial office space, but often found myself sitting in an office building late into the evening and often into the wee hours of the morning. The business was consuming my life."

The cost of renting the office also put pressure on Devin to keep the business growing as rapidly as possible. She had originally envisioned her company as a "mini Control Data," but began to rethink her business strategy—and her personal needs. "I decided that I didn't want to keep

growing, or to be big just for the sake of being big," she recounts. "I had to come to grips with that. When you go up the ladder, you become a troubleshooter. I didn't want to do that. I wanted to do more creative things, meet people, manage, help people develop their skills, and also be a strategic thinker. I wanted control of my business."

Devin reconfigured Medium Well Done accordingly. Since she usually called on her customers, she decided that she could do without her expensive downtown office. In late 1983, after a year of scouring Minneapolis, she purchased a house that could also serve as a base for her business. Although it needed renovation, the house offered separate entrances for the office and the living space, off-the-street parking, and easy freeway access. She decorated her office with antiques, rolltop desks, oak furniture, and modern art.

Now, with her three bedrooms and living area just a few steps away, Devin is more efficient with her time. There's no commute, and she can more easily balance her work and her personal life. The money she saves goes straight back into the business.

Cash flow is sometimes a problem. Devin does get bank loans on her business line of credit (her business serves as collateral), but she uses her personal credit card if the banks can't respond quickly enough. She tries to avoid doing so because of the high interest rates.

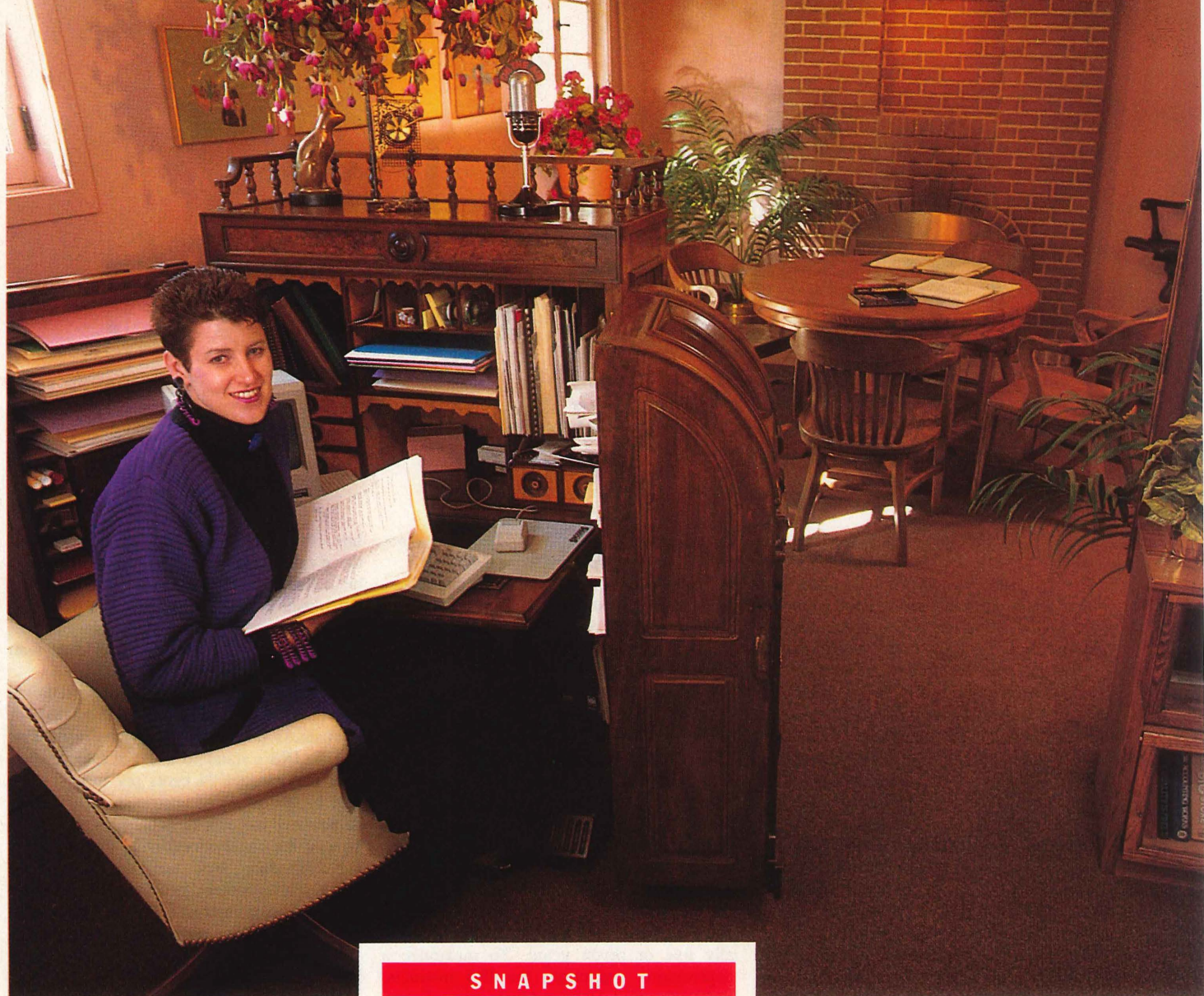
Since Medium Well Done often competes with firms 30 to 40 times its size, Devin markets it as a company that spends money on its products and personalized service—not on excessive overhead. She pitches herself as a professional with a management background and wants her clients to look at her resources as a part of their extended staff. A firm believer in quality customer service, she feels that going the extra mile keeps the client coming back. "It's easier to keep a client than to find a new one," she explains.

Devin has no salaried employees, which she says is not unusual in the instructional media business. A core group of nine contractors, some of whom have been with Medium Well Done since the early days, provides her with what she calls the meat-and-

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KAREN L. NOVAK wrote "Managing Costs with Excel" in the November issue of HOME-OFFICE COMPUTING.





## SNAPSHOT

### Judi Devin

**RESIDENCE:** Minneapolis, Minnesota

**BUSINESS:** Medium Well Done, instructional media firm

**GROSS ANNUAL INCOME:** \$1 million

**EQUIPMENT:** 5 Macintosh Plus computers with external drives; IBM PS/2; 2 Apple LaserWriter printers; color monitor; Apple modem; Xerox 2830 copier; 6 Kodak multi-image projectors, photography equipment, and light tables; Arturus monitor (for video and computer output); Eikivision and Panasonic VHS videocassette recorders; Sanyo Sanfax 515 facsimile machines; multiline phones

**SOFTWARE:** Microsoft Word, Microsoft Excel, PowerPoint, Framework II.

**RX FOR SUCCESS:** "When you're the busiest is the time to go out and sell. When you're small, it's easy to get caught up in the short-term frenzy. Don't lose sight of the long term."

potatoes work: developing instructional materials for corporate training programs. Additionally, she uses an assortment of up to 35 specialists, including graphic artists and computer programmers. Devin also has a voice-mail system, complete with voice mailboxes for individual clients.

### SAVVY BUSINESS STRATEGIES

How does Devin keep her business small enough to control yet large enough to stay in the black? "Each year I set some goals," she says. "For instance, one goal I have is to keep the clients I've got and target five new ones." She adds that because she continues to strengthen her customer base, she won't suffer if she loses a client. Devin also stresses the importance of keeping the sales process in motion. "When you're the busiest is the time to go out and sell," she says. "When you're small, it's easy to get caught up in the short-term frenzy. Don't lose sight of the long term." She cautions that if you lose sight of this, you end up without work once you've completed a job.

Careful planning plays an important role in Devin's growth strategy. Because of her original attention to detail, she's still able to use the first brochure she ever created for her business. Since she designed the bro-

chure to fit a matching business card in an inside flap, she never had to reprint it when she relocated. Devin also left room to accommodate the addition of supplemental material, such as information on special services or enclosures that are geared to a specific audience.

Her regular clients don't mind that Judi Devin isn't looking out of a twentieth-story window at a downtown cityscape, although new clients sometimes are initially wary of her home-based operation. Devin recalls the time some clients from Iowa wanted to visit her office before giving her a big job. She met them at the airport, brought them to Medium Well Done headquarters, and watched them blanch. "The old stereotype of a home business not being serious entered their heads," she says. They spent two days discussing the project with her, and several days after returning to Iowa, they called to say they were sold on Devin's professionalism. She got the job and many more after that, which, she says, demonstrates her maxim, Office is a state of mind. ■



# Holiday Joy! Give Less to the IRS

*What You Can Do Today to Lower Your Tax Bill Next April*

BY GAIL RUTMAN

**A**pril 15 undoubtedly strikes you as the dreaded income-tax deadline. Its approach sends you scrambling to collect your records, have your tax return prepared, and secure the cash for any taxes you may owe.

But the real deadline is December 31. That's basically the last chance you have to control the outcome of your tax return and eliminate last-minute surprises. Proper end-of-the-year planning can save you money and block those April 15 headaches before they start.

## THE BASIC GOALS OF TAX PLANNING

Most year-end tax-saving tactics involve moving income and deductions from one year, entity, or person to another. As in chess, you can choose specific plays to thwart your opponent, who, in this case, is the Internal Revenue Service. Although you can exercise more options if you're self-employed, employees have choices as well.

If you're an entrepreneur, you most likely operate your business as either a sole proprietorship or a partnership. Although easy to set up, these two entities share the disadvantage of allowing your business creditors to lay claim to your personal property. They provide a powerful tool for tax planning, however, since business income and losses are reported directly with your 1040 tax return (on Schedule C for a sole proprietor and on Schedule E for a partner).

To retain a sole proprietorship's or partnership's tax advantages yet enjoy the protection from creditors that corporations offer, many business owners are turning to the S corporation. In contrast to shareholders of a regular C corporation, which is considered a separate taxable entity, shareholders report S corporation activity on Schedule E of their own tax returns, the same way they'd report partnership income. (For more information

on this subject, see "Should You Incorporate?" in the October 1989 issue.)

For the IRS to accept business deductions in excess of income, a sole proprietorship, partnership, or S corporation must establish a profit motive. Even if the business shows a loss for tax purposes, good records can allay the IRS's fear that your business really may be a tax shelter.

## REDUCTIONS FOR BOTH EMPLOYEES AND THE SELF-EMPLOYED

With these basic precepts in mind, let's look at business tax strategies that apply to deductions of both home-based self-employed people and employees.

**Depreciation.** You are entitled to deduct the business portion of the cost of furniture and equipment over a period of time, generally five or seven years. To maximize a depreciation deduction, the IRS instructs, make sure that at least 60 percent of your current year's purchases fall in the first nine months. Also, note that business use of assets devoted partially to personal needs must exceed 50 percent. Depreciation isn't just for the self-employed, either; if you have a home office for your employer's convenience, for example, you might be able to depreciate the cost of your computer.

Instead of depreciating purchases, however, you can deduct their full cost all at once. However, this option has a \$10,000 limit per year; above this limit, you must depreciate. Furthermore, if this expense exceeds your net income, you have to defer the deduction—or that portion above your net income—to a year when net income is sufficient to absorb it.

If it looks like more than 40 percent of new business acquisitions will occur at the end of the year and/or their total cost will exceed either your net income or the \$10,000 expense limit, consider postponing new purchases to 1990.

**Automobile expenses.** You can choose how to handle business use of your automom-

bile. For a newly purchased car that you drive more than 50 percent of the time for business, it's probably worthwhile to deduct the business portion of the car's depreciation, maintenance and repairs, gasoline, insurance, registration fees, and auto-loan interest.

If you don't want to track these detailed expenses, if the car is fully depreciated, or if business driving is relatively infrequent, use the IRS's standard mileage rate instead. You may deduct 24 cents per mile for the first 15,000 miles of business use of a non-depreciated car and 11 cents per mile thereafter; if the car is depreciated, then 11 cents per mile only. You can also deduct the business-use percentage of registration fees and auto-loan interest. You cannot, however, deduct miles spent commuting, unless you're both self-employed and work from a home office.

Whichever method you choose, be sure to keep track of both the business miles and the total miles driven for the year. A simple database program used as a logbook would be helpful for this.

## SAVINGS FOR THE SELF-EMPLOYED ONLY

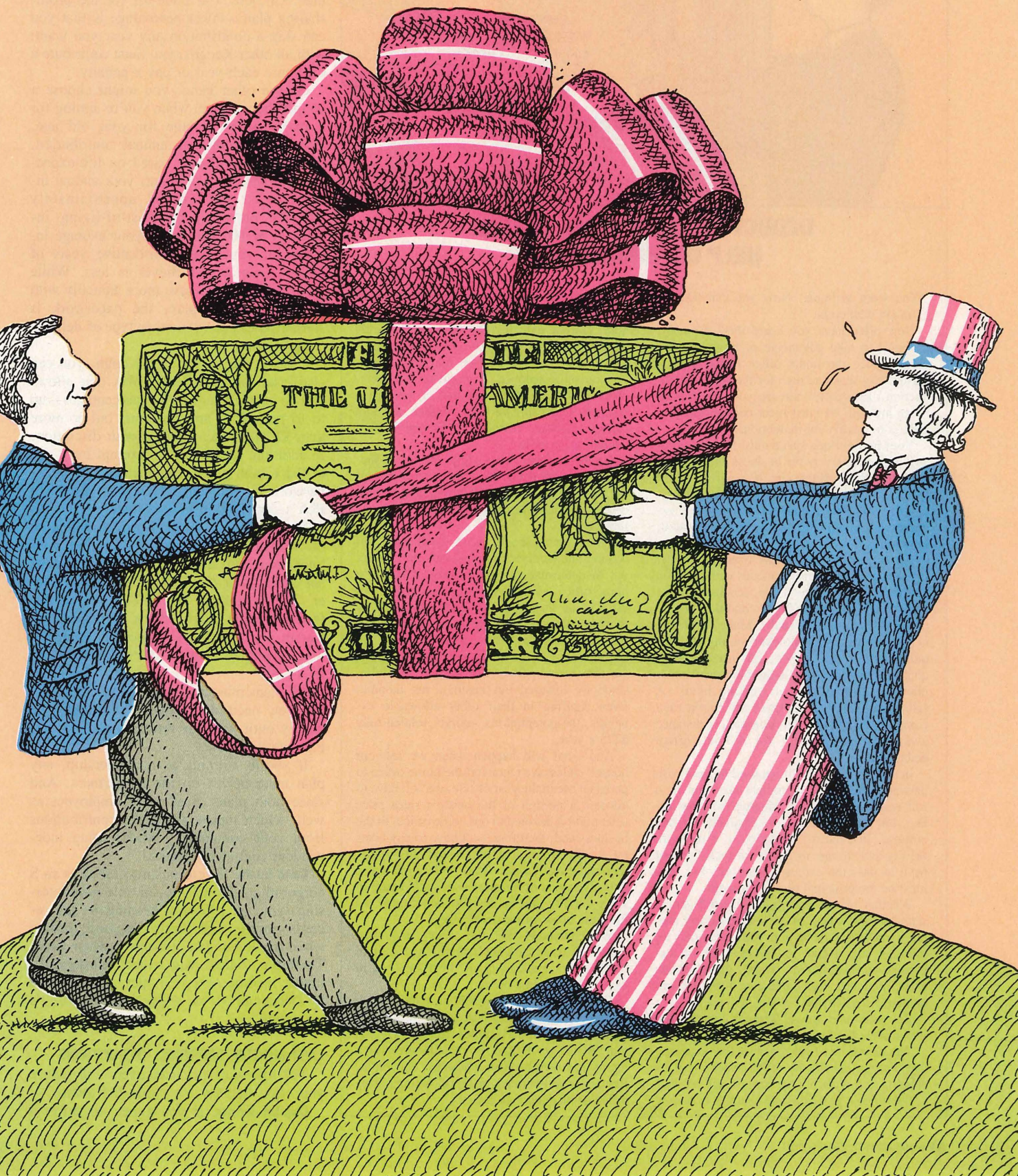
Now let's turn to business tax strategies for self-employed taxpayers only.

**Retirement plan.** One of the few tax shelters remaining after Congress supposedly simplified the national tax structure in 1986 is retirement plans. Two kinds may be mixed and matched by the self-employed (or using the self-employed portion of your income if you're also an employee): a Keogh plan and a Simplified Employee Pension-Individual Retirement Account (SEP-IRA) plan. With both plans, you pay no taxes on contributions or their earnings until you start to withdraw the money, usually at retirement—which the IRS defines as age 59½.

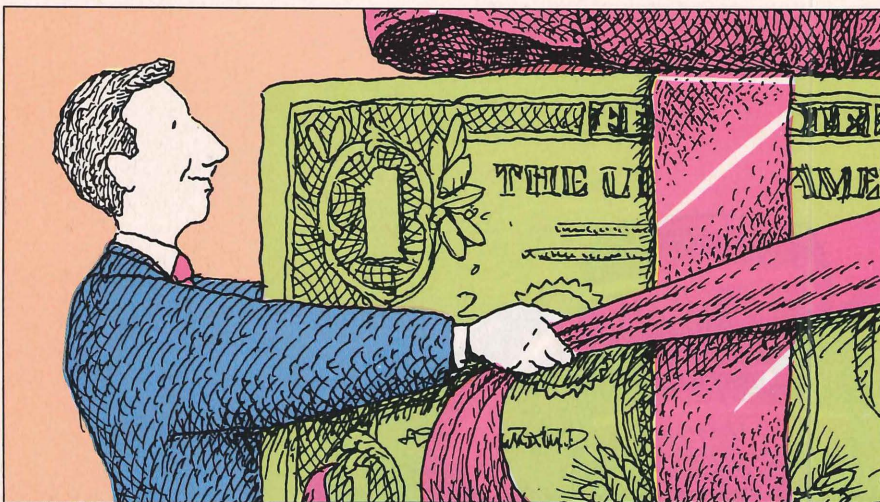
A Keogh plan requires an annual fixed contribution, which is deductible. You may choose from two types of Keogh plans: defined-contribution and defined-benefit. To

GAIL RUTMAN is a certified public accountant who writes about financial matters and taxes.









## DEDUCTING YOUR HOME OFFICE: HELP OR HINDRANCE?

"You work at home. Now you can take an extra tax deduction."

How often have you heard this? Actually, it's hard to take advantage of this extra tax break. Since the home office tends to be a particularly sensitive area for the IRS—its deduction can greatly increase your chances of being audited—it must meet certain stringent criteria to qualify for deductions.

Your home-office space must be used regularly and exclusively for business and must be your principal business site. (Even if you don't use your home office exclusively for business, you can still deduct home-office business expenses.) Certain exceptions are permitted, however.

An employee who works from his or her home can claim a miscellaneous deduction on Schedule A for a home office, according to the IRS, providing its use is "a condition of employment and is substantial." Make sure to get a letter from your employer stating this requirement. A salesperson, for instance, may qualify if required to be available for customer phone calls after normal working hours. A salesperson or other employee who works for a company based more than commuting distance away can also qualify for a home-office deduction.

In addition, a home office used to meet with patients, clients, or customers need not be a self-employed person's principal business office, but it must be used exclusively for that purpose. In contrast, operation of a day-care facility and storage of goods for resale do not have to pass the exclusive-use test, but they must be the principal places for work.

Whether or not your home-based business satisfies these rules, or even if you don't take the home-office deduction you're entitled to, you can still deduct all business-related expenses, such as supplies, wages, and telephone calls. You can also depreciate furniture and equipment purchased for business use.

But what other tax advantages come to you if you meet the home-office qualifications?

You can deduct 100 percent of any expenses that directly benefit the office space, such as painting and repairing the room itself, as well as the office's proportionate share of expenses

that serve the entire house, such as outside painting and roof repair, electricity, insurance, home mortgage interest, property taxes, building depreciation (over 31½ years), and rent.

However, your deduction may be limited. For the self-employed, any part of the home-office deduction that generates or adds to a business loss can't be used. Rather, the loss carries to future years when income is high enough to cover it.

On the surface, these additional tax deductions sound good, but the detailed record keeping may not be worth it. Claiming home-office deductions may even be disadvantageous in the long run.

When my husband and I established our writing and seminar business at home, we set out to determine the practicality of taking a home-office deduction on the two rooms we use for the business. We discovered that by moving a portion of our residence and interest taxes on Schedule A to business expenses, we decreased our self-employment tax. However, we also lost a part of our Keogh deduction, since we lowered our business net income. Even figuring in their other allowable expenses, the potential tax savings totaled only \$275 a year.

And what will happen when we sell our house? Unless we reconvert the home office to personal use in the year of sale, we will have to allocate a portion of the house's sales price (that portion devoted to our home office) to the business and, therefore, will have to pay taxes on it. Since we live in an area of rapidly increasing real-estate values, selling the house after five years of business use would result in a tax liability greater than the benefit derived from the home-office deduction.

We concluded that the yearly deduction wasn't for us and are not bothering to maintain the business exclusivity of the rooms we're using for our home office.

However, the results would have been much different if we rented instead of owned our home. A portion of significant items, such as rent, which are normally nondeductible for a lessor, can then become a business deduction. Renters are often much better off taking home-office deductions than owners.

mix matters further, there are two types of defined-contribution plans: profit-sharing and money-purchase.

A defined-contribution plan is limited, in practice, to either 13.043 percent (profit-sharing) or 20 percent (money-purchase) of your net self-employed income but no more than \$30,000. The trade-off for the profit-sharing plan's lower percentage is that you can skip a contribution any year you want; with all other Keoghs, you must contribute a set figure each year or pay a penalty.

On the other hand, you might choose a defined-benefit plan when you're aiming for a fixed annual income for your old age. Here you establish an annual contribution, paid quarterly, that is based on life-expectancy tables. At retirement, your annual income must not exceed approximately \$94,000 (adjusted for cost-of-living increases) or 100 percent of your average income for your three consecutive years of highest income, whichever is less. While you may be able to save more annually with a defined-benefit plan, the paperwork is somewhat easier with either type of defined-contribution plan.

Even if you've set up a Keogh, you can also establish a SEP-IRA plan that allows you to contribute varying percentages—up to 15 percent of gross income, but no more than \$7,313—each year, at your discretion. In addition, a SEP-IRA is exempt from any of the Keogh plans' complicated yearly paperwork requirements. However, the SEP-IRA's contribution limit is lower.

You can have one plan or a combination of SEP-IRA and Keogh, as long as your total deductions do not exceed 20 percent of net earnings or \$30,000, whichever is lower. For flexibility, the best of all tax-deferred worlds might be a profit-sharing Keogh plan fixed at a 10 percent contribution combined with a discretionary SEP-IRA plan.

All plans must be set up by December 31, but you need not actually contribute the money until your tax return is due (including extension time).

If you're working as a partnership, any plan must be set up for all partners. And since both plans must cover employees as well, which means additional contributions from your company, consider using independent contractors instead.

**Cash basis.** If your business entity is an S corporation, partnership, or sole proprietorship, you are probably keeping its tax records on the cash basis—logging income when received and expenses when paid. Therefore, unless you expect substantially higher income next year, pay all your bills by December 31 to deduct them on 1989's tax return.

## LAST-MINUTE PERSONAL DEDUCTIONS

The following tax maneuvers will reduce your tax liability on your IRS return.

**Capital losses.** If you expect to suffer a



loss from the sale of securities or real estate, the deduction (reported on Schedule D) is limited to \$3,000 per year. So, if your loss is large, consider generating gains. For example, sell the stock you made a killing on this year instead of next.

However, capital losses exceeding the \$3,000 limit don't vanish forever; they carry forward to succeeding years. Thus, if you expect a low taxable income this year but a substantially higher one next year, you may want to delay using the entire loss and also hold onto appreciated property. For example, you would put off closing on a lucrative real-estate sale until the beginning of 1990.

**Children's income.** Shifting investment income to your child can provide you with an effective tax shelter, especially if you're saving for his or her college education.

If your child is under 14 years old, he or she enjoys a low tax on unearned income up to \$1,000. Thus, put investments that generate up to \$1,000 of income per year in your child's name. For unearned income over \$1,000, though, children under 14 are taxed at their parents' rate.

For a child over 14 years old, all income up to \$18,550 is taxed at 15 percent. If you're in the 28 percent tax bracket (taxable income over \$29,750 for a married couple filing jointly), add investment income to that child's earnings up to \$18,550.

**IRA.** A standard IRA contribution is deductible up to \$2,000 per person (\$2,250 if your spouse has no income), but is limited to your earned income if that's less than \$2,000. However, if you or your spouse has

## By establishing December 31 as your real tax deadline, you can block those April 15 headaches before they start.

another retirement plan—for the self-employed or provided by your employer—you cannot use the IRA deduction at all if your adjusted gross income exceeds \$50,000 (joint return) or \$35,000 (single), and your IRA deduction is only partial if your income is over \$40,000 (joint) or \$25,000 (single).

Still, no matter what your situation, you can make the contribution and not pay any taxes on the earnings of your IRA investment until you withdraw the money.

**Taxes.** (Reported on Schedule A.) Consider paying all state and local income and property taxes by December 31, even if they're not due until early 1990, so you can take the deduction this year instead of next. However, if you expect greater income next year, postpone payments until due.

**Consumer interest.** (Reported on Schedule

A.) Only 20 percent of the interest resulting from consumer loans, such as credit cards and auto loans, is deductible for 1989, with a mere 10 percent deductible for 1990, and nothing after that. If significant, consider paying off these loans with proceeds from sources that will lower your tax liability.

For example, take out a home-equity loan, which, for tax purposes, is a loan secured by your residence and used for personal expenses. For the interest to be fully deductible, the debt is limited to \$100,000. The major drawback of this tactic is future needs: Should you try to tap the home equity source later on, it could be dried up. Also, should you default on this type of loan, you could lose your home.

Another way to get cash to pay off consumer interest is to sell an investment for a profit or a loss, depending on which benefits you more (see "Capital Losses" above). Later you can take out a new loan to purchase another investment. As long as the replacement investment is not a tax-exempt security, you can deduct the interest on this new loan up to your total investment income—interest and dividends from stocks, bonds, mutual funds, CDs, and bank accounts. This tactic, however, could backfire if you expect the investment you have now to give you a greater return in the future than the current tax savings from paying off your consumer interest.

A third alternative for eliminating consumer interest is to take a nontaxable cash withdrawal from your S corporation or partnership. Then replace the funds with a business loan, which must be used for business, but whose interest is completely deductible.

**Charitable deductions.** (Reported on Schedule A.) Now is the time to donate those household goods or the outmoded business equipment you no longer use. Their current value is fully deductible if you itemize.

**Medical and miscellaneous deductions.** (Reported on Schedule A.) To be deductible, these expenses must exceed a certain percent of your total adjusted income: 7.5 percent for medical and 2 percent for such items as employee expenses, tax-preparation fees, and investment expenses. If you are close to the minimum allowance, consider prepaying medical and miscellaneous expenses where practical. However, if you expect to fall substantially short of the allowance, don't spend the time creating detailed records of these expenses.

### YOU CAN AFFECT THE TAXES YOU PAY

As is evident from these business and personal tax-saving tactics, Congress isn't the only decision-making body that affects the taxes you pay. You too, with the help of your tax adviser, can make decisions that influence your tax burden. Establishing December 31 as your real tax deadline, you can prepare yourself and your tax preparer better for the IRS's April 15 deadline. ■

## THE NO-ALTERNATIVE TAX

After you've figured out how to reduce your tax burden, a surprise tax can surface. The *alternative minimum tax* (AMT) wipes out many of your legitimate deductions and losses. In essence, the AMT is a tax devised by the IRS to make sure that high-income individuals who use the tax code to pay little or no taxes—especially with deductions and depreciations—pay some taxes nevertheless. Unless you're aware of its effects, the AMT actually can leave you with *no* tax alternatives.

It's tricky trying to predict whether or not any individual will be subject to the AMT, since it interacts with the rest of your tax situation. Therefore, I can only alert you to the possibility of this very complicated tax, as scenarios can differ so much. For instance, you are especially susceptible to this additional tax if you had substantial tax-shelter write-offs, paid large amounts of state and local taxes, received high income from municipal bonds that benefited certain private enterprises, or contributed greatly appreciated property to a charity or other nonprofit organization.

Should you have any questions about the AMT, you must check with your accountant. And if the AMT threatens your tax survival, consider shifting trigger items to years where they will minimize the burden.

I've put together a fictionalized scenario that's typical of AMT victims. When Bill Jen-

sen and Susan Locke suspected they might confront an unusual tax problem this year, they consulted a tax adviser about their situation. The couple is married with two children. Bill is a university administrator, and Susan runs a home-based consulting business. Susan expects her business income to double in 1990. Besides Susan's Keogh, the couple has two investments: a large income-producing tax-exempt bond and a limited-partnership interest with consistent losses. They want to sell these investments in 1990.

Fifteen years ago, Bill received a gift, a painting from his parents by a then unknown artist. It originally cost \$500; today it's worth \$30,000. Bill and Susan no longer want to keep the painting. Since selling it would take a lot of time and result in a tax on the \$29,500 gain, they intend to give it to a local museum and take a charitable deduction of its total \$30,000 value.

The couple's tax adviser determined that if they contribute the painting this year, the donation will trigger an additional \$4,000 of AMT. However, because of the effect of the expected sale of investments in 1990 and Susan's projected increased income, they will save more than \$6,000 in income taxes if they donate the painting next year instead.

Bill and Susan have found an alternative to this "no alternative tax."



# Put Time on Your Side

One of your chief reasons for working from home may be the freedom to allocate time as you see fit—to take a minute, an hour, or a day off to spend by yourself or with your family. But it's one of the hardest things to do. According to HOME-OFFICE COMPUTING's 1989 survey of its readers (results were published in September issue, page 53), managing time was the toughest task cited. "Everybody has time-wasting traits," says time-management consultant Patricia Fripp.

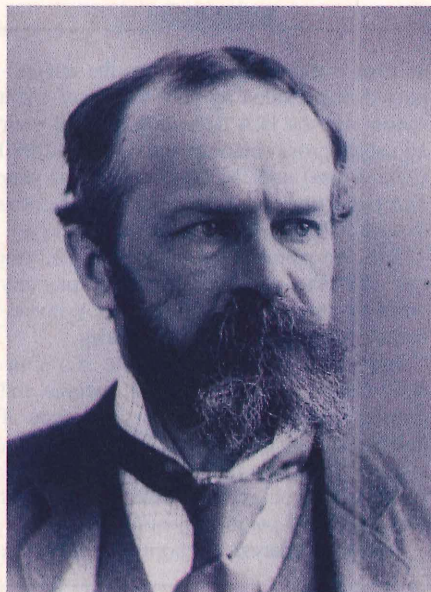
The benefits of solid time management are clear. Fripp regularly encounters successful home-based businesspeople who have great filing systems, know how to say no, make decisions quickly, prioritize, don't keep people waiting, deliver on time—and have incomes much higher than average. "Successful sole proprietors know how to compensate for time-wasting habits."

Whether you choose to work two hours or 12 hours a day, here's a checklist of ideas to help you put time on your side.

After a career with General Dynamics, JAN DEAN launched her own home-based consulting business, *The Well-Organized Woman*. She also writes, speaks, and gives time-management workshops and seminars for the U.S. Small Business Administration across Texas and Louisiana.

## Take a Minute (or Two) to Run Through This Checklist of Timesaving Tips

BY JAN DEAN



**"Nothing is so fatiguing as the eternal hanging on of an uncompleted task."**

WILLIAM JAMES,  
PHILOSOPHER

**"He who hesitates is last."**

MAE WEST,  
ACTRESS

## Seven Time-Wasters and How to Handle Them

### PROBLEM 1: Procrastination.

#### SOLUTIONS:

- Trick yourself by committing 10 minutes to the task you are avoiding. More than likely, you will continue with the job when the time is up.
- Reward yourself after you finish.
- Reserve specific times for exercise, yard work, and housework.
- Set up a regular schedule so you won't be tempted by more pleasing distractions.

### PROBLEM 2: Perfectionism.

#### SOLUTIONS:

- Set time limits on each portion of a given task.
- Recognize that most projects require completion and few require perfection.

### PROBLEM 3: Indecision.

#### SOLUTIONS:

- List all pros and cons of the decision to

be made.

- Evaluate the list, focusing on major issues rather than small details, and don't step away until you've made a decision.

### PROBLEM 4: Taking on too many projects.

#### SOLUTIONS:

- Just say no.
- Find a colleague to whom you can refer extra work (and who will refer work to you when the shoe's on the other foot).
- Develop a system that lets you use the same basic research or work for two or more jobs.

### PROBLEM 5: Business associates or customers who make unrealistic promises or don't pay on time.

#### SOLUTIONS:

- Negotiate and sign contracts for major projects.
- Be selective; work with people with prov-

en track records for honoring commitments.

### PROBLEM 6: Too many errands.

#### SOLUTIONS:

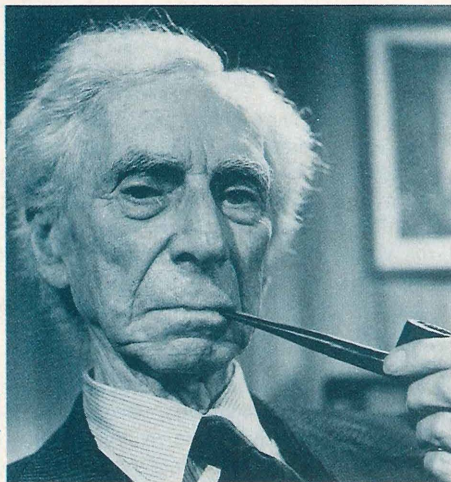
- Buy in quantity, before you run out.
- Schedule biweekly or monthly supply trips, and get everything at once.
- Find a local office-supply store that will deliver goods to your office.

### PROBLEM 7: Learning new software or hardware.

#### SOLUTIONS:

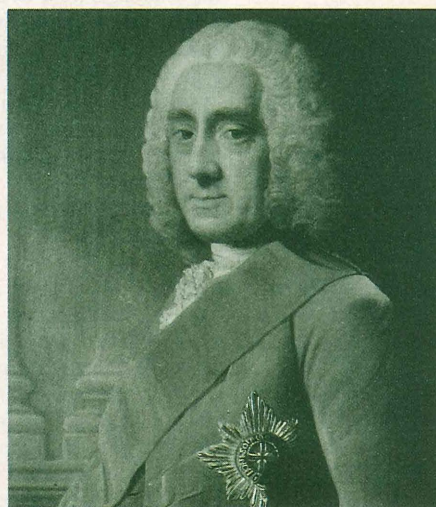
- Before you use a given product under fire, take a course, use the tutorial, hire a consultant, or at least read the documentation. (This last practice has actually been known to work.)
- Know what you really need from the program or product (you might not need its full capabilities) and invest the time and money required to learn it properly up front, before your business depends on it.





**"Nothing is so exhausting as indecision, and nothing is so futile."**

*BERTRAND RUSSELL,  
PHILOSOPHER*



**"The less one has to do, the less time one finds to do it in."**

*LORD CHESTERFIELD,  
BRITISH NOBLEMAN*

PHOTOGRAPHS FROM THE BETTMANN ARCHIVE

## Eight Timesaving Tips

**1. Batch tasks and steps.** Run as many errands as possible in the same outing (bank, grocery, gas station, post office, office-supply store, dry cleaner). Pay all bills once a month, assembly-line style. Keep ongoing lists of household and office supplies you need. For repetitive tasks, such as backing up files, make a list of all the steps needed for the job and refer to it each time you repeat the task. You won't forget anything, and you won't have to stop and think about what needs to be done.

**2. Use snippets of time.** If you have 5, 10, or 30 minutes to kill, put that time to work. In 5 minutes, make an appointment or call in an order for office supplies; in 10 minutes, clean your desk and work area or print out a letter; in 30 minutes, outline a new project, pay your bills, or install a modem.

**3. Invest in efficiency.** In addition to the time- and step-saving machines you may already have, such as a computer, copier, fax machine, and answering machine, consider some other products and services that

could increase your efficiency:

- Use postcards. Because they don't require much input from you and don't need envelopes, postcards beat letters to the mailbox by a long shot, as long as they fit the purpose and look professional.

- Duplicate phone directories. Put one by each telephone in your house. Keep a pad and pencil by each phone, too.

- Stack file trays. Instead of tossing all of your papers into one disorganized pile, sort them into three file trays based on what they require: reading, answering, or filing.

- Employ a mailing service. For large mailings, such services handle printing, envelope stuffing, labeling, and sorting while you keep up with the creative work.

**4. Keep good records.** Set up and scrupulously maintain a basic record-keeping system and a workable filing system. Without these, valuable time is lost looking for important papers, receipts, contracts, and invoices.

**5. Make a goal poster.** Draw up a list of projects you hope to accomplish in the upcoming months. Display it prominently as a reminder not to waste time on tasks that are unimportant to your overall plan.

**6. Plan ahead.** Take a few minutes in the evening or morning to make a list of what you must do and what you want to do every day. Divide the list into To Call, To Meet, To Write, and other logical divisions.

**7. Use one calendar.** To avoid duplicate entries, use a single planning system to keep track of personal and business appointments, telephone calls, correspondence, meetings, and social events. Make sure it has a month-at-a-glance section so that you can include long-range plans and commitments (such as the dates when the estimated quarterly tax payment is due).

**8. Jettison clutter.** Put your essentials where you most frequently use them. You'll save time cleaning and hunting for misplaced items.



# Different People, Different Schedules

Establishing a regular schedule blocks out time for certain tasks, giving you one less detail to think about. The work schedule you choose depends on your type of work and personal style—there are countless ways to make time work better for you. Some independent professionals need a rigid structure, others find they must constantly juggle and shift priorities, and still others must meet family responsibilities during the workday. Read the following schedules from home-business owners. Adopt or adapt the type of schedule that best suits your work style, your personality, and the requirements of your business.

"I schedule office hours from 9 a.m. to 4:30 p.m. Monday through Friday, so people know when they can find me. Occasionally, I leave the office during those hours for meetings or to run business-related errands. Less often, I take personal time during those hours. Seldom, due to rigid discipline, do I work weekends, nights, or holidays in my office. I used to drive myself 60 to 75 hours a week, but no more."

PEGGY GLENN, owner, *Aames-Allen Publishing and Firefighters Bookstore, Huntington Beach, California*

"I have busy times of the year—around holidays, for example—when I'm working long hours every day of the week. During the off-peak times, I shift down a couple of gears and study to improve my skills, devel-

op new marketing ideas, and spend more time with my family. I've also designated Tuesday as self-improvement day: I read, study, or take a course, and nothing is allowed to interfere with that. I've found that if I don't preserve a day for myself, my work suffers."

TERRY TEPPER, professional photographer, *Chicago, Illinois*

"Establishing a routine work rhythm has been important, since I'm constantly juggling my three main clients: a hospital, a local counseling group, and a school district. Part of my consulting agreement with the schools is to be available for crisis counseling for children who may be abused or suicidal, so I'm on call all the time. Those types of emergencies may only come up six or eight times a year; but when they do occur, there are systems in place so I can handle them without the rest of my practice falling apart."

BOB SEDGWICK, psychologist, *Andover, Massachusetts*

"My wife, Terrie, a television producer and scriptwriter, and I, an attorney, TV commentator, and writer, both work from home. We tend to keep our to-do lists in our heads since our priorities are constantly changing. About the only way we need to structure our day is to share the computer. Generally, I write on the Macintosh in the morning, and she uses it in the afternoon.

Of course, that system sometimes breaks down as things come up, but we negotiate." WESLEY J. SMITH, author of *The Lawyer Book*, *The Doctor Book*, and *The Senior Citizen Book* (*Price Stern Sloan*), *Los Angeles, California*

"I try to establish certain activities for certain days of the week (for example, Monday and Tuesday are for generating new business), but the element of the unexpected is one of the best reasons for not having a real job!"

BARBARA WINTER, publisher, *Winning Ways News, Minneapolis, Minnesota*

"In order to juggle time between our two-year-old son and our home-based businesses, my husband and I have the following routine: to bed by 9 p.m. and up around 4:30 a.m. He does paperwork necessary for his sales job, and I go to my accounting practice, which is in a separate building behind our home. With no clients or calls that early, I get in two very concentrated hours of work. At 7 a.m., I return to the house, shower, dress, feed the baby, and spend about two hours with him before the sitter takes over. I then head back to my office where I generally work until 4:30 p.m. The next hour is supposed to be personal time, but you know how that goes. It took us six months to get in this routine, but it works well for us, because we are consistent and we don't watch nighttime TV."

CHRIS GREEN, CPA, *Fort Worth, Texas*

## Seven Simple Ways to Speed Up Your Work

### 1. Automate frequently used sequences.

Automate any computer task you perform regularly, if possible, so you don't have to manually execute all the keystrokes. Many programs, especially communications and spreadsheet programs, now include a Learn mode that records your keystrokes and plays them back at the touch of one key.

**2. Use a hard-disk organizer.** If your hard-disk drive is so full of data that you spend precious time searching for files whose names you can't remember, get help. MS-DOS users should try a program like *Magellan* (Lotus; \$195, see "Editors' Picks 1989: Software That Shines" in this issue) or *ViewLink* (Traveling Software; \$150). They search your hard-disk drive by text strings or keywords and let you view the contents of each file in your directory without actually opening them.

*GOfer*, for both Macintosh and MS-DOS computers (Microlytics; \$80) also searches files for text strings. *DiskTop 4.0* (CE Software; \$100) for the Macintosh is a file-finding program that incorporates *GOfer*.

### 3. Perform two computer tasks at once.

With the right software, you can perform two computer tasks at once—send a file by modem and write a letter, for example. Macintosh users with 2MB or more can use *MultiFinder* for this limited multitasking; MS-DOS users with 286 or 386 computers can use *DesqView*, *DesqView/386*, or *Operating System/2*.

Print-spooling software, which lets you print out while using your applications, can accomplish the same thing. Many new printers have built-in print buffers, so you can work on your computer as they print. And laser printers use their memory as buffers.

**4. Install a second phone line.** With two phone lines you can do two things at once—send a fax and make a phone call, for example. Depending on your work habits, the time saved can really add up. (*For more information, see Workstyles in this issue.*)

**5. Use a speakerphone.** Enter frequently-dialed numbers into your phone's memory, then dial via speakerphone. Instead of picking up the receiver, you just push one button to turn on the speakerphone and another to dial. While the phone dials and rings, your

hands are free for other tasks.

**6. Use pop-up software.** Memory-resident programs (for MS-DOS computers) and desk accessories (for Macintosh computers) stay in the background until you call them up with a simple keystroke sequence or menu choice. Because you don't have to exit the application you're in and load a new application to find a missing piece of data or record a note, these pop-up programs can save time and aggravation. Most pop-up programs have handy clipboards so you can cut and paste material from the pop-up program to your main application.

**7. Get a feature-packed fax machine.** There's little point in buying a fax machine to increase your productivity if you're not going to buy one with a document feeder and a paper cutter. Without these two features, you'll spend valuable time feeding paper into the machine and cutting and collating incoming documents. You'll hinder your productivity as much as you help it. (*For more information, see "Buyer's Guide to Fax Machines," in this issue.*)

—NICK SULLIVAN



# Fax Machines

*How to Find the Best One for Your Business. Plus: Reviews of Four You Can't Go Wrong With*

BY FRAN CHESLEIGH



Image reduction is just one of the features that make the Fujitsu dex 150 PowerFax an Editors' Pick.

Just in case you've been asleep for the past two years, a facsimile machine (fax, for short) converts text and graphic images from a sheet of paper into an electronic format and transmits them over telephone lines to another fax machine, which prints out a copy of the original.

The fax machine is fast becoming one of today's standard means of transferring documents—whether the correspondents are a few blocks or a few continents apart. Why? Because it's virtually instant, reliable, and inexpensive (it costs as much as a phone call). It's a great improvement over the telephone, the mail, and couriers.

Fax machines are useful when it comes to transmitting letters, manuscripts, and complex material, such as charts, graphs, plans, artwork, or photographs. And you can use them to send out documents that require signatures, and get them signed and back in a

matter of moments, a process that would have taken hours or days without a fax.

Every make and model of fax machine offers its own special combination of features. Some are standard with most units, others are highly specialized and sometimes quite costly. Brief descriptions of the conveniences offered by many fax machines follow.

## BASIC PRODUCTIVITY FEATURES

Increasing office productivity is the best reason to buy a fax machine, and these features are basic productivity boosters for virtually any office. Each of the machines reviewed in this guide has the four features discussed below.

**Automatic Document Feeder (ADF).** A document feeder lets you stack originals for automatic insertion and transmission. (The maximum number of pages, anywhere from 5 to 30, depends on the machine.) Without an ADF, you'd have to stand at the machine, hand-feeding originals page by

page—a time-consuming and tedious task. With an ADF, all you have to do is press the start button.

**Automatic Paper Cutter.** It may sound trivial, but having all incoming pages automatically cut to the proper size is a real convenience. Otherwise, you have to pick up a pair of scissors every time you receive a multipage transmission or deal with long, unwieldy rolls of paper. **BUYER'S TIP:** *If you do a lot of sending and relatively little receiving, you may be happy to forgo this feature and save some money.*

## ABOUT THIS BUYER'S GUIDE

This Buyer's Guide explains what to look for when choosing a facsimile machine for home-office use. It includes reviews of four fax machines from top manufacturers. All four have productivity-enhancing features essential for most home offices, including automatic document feeders and paper cutters. The accompanying chart includes specifications for 26 other fax machines.

FRAN CHESLEIGH is a freelance writer based in New York City.



**Automatic Reception.** Do you want to have to stand at your fax machine in order to receive a transmission? Probably not. Today, most fax machines automatically answer the phone, connect with the sending fax, and receive the document—all while you're out having lunch with a client or putting the finishing touches on the quarterly sales report.

**Terminal Identification.** Terminal identification puts a special header on each page of your outgoing documents, showing your company name or personal ID, the date and time of the transmission, and the individual page number. This drastically reduces the possibility of your transmissions getting lost or misfiled.

### SPECIAL FEATURES

The following features may prove useful in some home offices, and may be worth the additional expense.

**Automatic Image Reduction.** This function automatically reduces the size of original documents wider than 8.5 inches so they can be received by a standard fax. (Without this feature, you can normally send and receive only documents ranging from approximately 5 to 8.5 inches wide, and 3 to 14 inches long.) Fax machines that incorporate this feature have document feeders that accept wide pages. If you're an architect or an artist, image reduction may be crucial to your work.

**Activity Reporting.** Many fax machines automatically record the date, time, and other appropriate identification of all documents sent and received. This feature comes in handy when tallying expenses and is likely to be useful in billing clients.

**Voice Request.** This lets you speak with the fax recipient before or after transmission. Many users like the feature because it allows them to discuss the document or pass along special instructions immediately.

**Delayed Transmission.** This feature lets you program your machine to transmit documents at a preset time—perhaps when it's most convenient for your client or when telephone rates are lower. If you're in New York City and want to send a document to an associate in Los Angeles at 5 p.m., you can set your fax machine to transmit at 8 p.m. New York time—while you're out to dinner.

**Memory.** With memory (RAM, just like a computer's), a fax machine can store one or more documents electronically. Suppose you need to send one document to several recipients. With memory, you can load it once and send it as many times as necessary. Without memory, you'd have to refeed the document for each transmission. (For more sophisticated uses of memory, see "Store and Forward," below.)

**Remote Control.** Some fax units offer a



*The compact Brother InstaFAX 300 is an excellent value.*

special remote-control feature, which lets you telephone your machine from another location and program it to perform any of its functions—all by way of touch-tone commands.

**Store and Forward (Broadcasting).** If you need to send the same document to several people (perhaps at the same time), broadcasting makes it possible. You program your machine with several fax numbers, so that it will automatically send a single document or message to various locations.

**Polling.** By polling, your machine can automatically retrieve information from many locations. Rather than have each sending fax unit call the receiving fax unit (which sometimes results in a busy signal), the receiver queries specified senders for information.

### SPECIAL PRODUCTIVITY CONSIDERATIONS

Besides the special features described above, you'll need to consider a few other things when choosing a fax machine: transmission speed, quality of the output, and degree of automatic operation provided.

**Speed.** Obviously, the faster a fax sends or receives a document, the sooner you or your clients will get the information. Also, if transmission is swift, the cost of individual calls will be lower (depending on how far and how frequently you fax.) The machine's own proprietary data-compression scheme is also a factor that affects the amount of time it takes to send your document. **BUYERS' TIP:** *To achieve an optimum speed, you should be sending to an identical model fax at the other end (although you may get fine performance sending to any model fax machine). Speed can also be affected by the quality of your phone lines. Noisy, static-ridden lines will*

*slow down any fax machine.*

**Output Quality.** How clear and readable a document is when it's received depends on two elements: the resolution of the image itself, which is measured in dots per inch (dpi), and the type of paper used for reception.

The image printed by a fax machine consists of a series of tiny dots. This means that the visual quality of the image depends to a large extent on the size of these dots and how close together they are. All currently manufactured Group 3 units (see "Machine Compatibility") offer a minimum resolution of 200 by 96 dpi. If you need a higher resolution, many units offer a "fine" mode (200 by 192 dpi), which takes considerably longer to transmit. If necessary, you can also select a machine that offers a "superfine" 200-by-392-dpi resolution. Naturally, such a unit will cost more.

A fax machine that prints on plain paper costs a lot more! Standard fax machines print on thermal paper—thin, shiny paper that curls during use and fades after being exposed to light for extended periods of time. Unless you want to spend more than \$4,000 for a plain-paper fax machine or wait until they invent a cheaper machine that uses plain paper, you'll have to use a fax board or make do with thermal paper.

The only paper-related difference in Group 3 units is the length of the paper roll. If it's important for you to load new paper into your machine as seldom as possible, you'll want to select the machine that holds the longest roll.

**Automatic Operation.** For maximum efficiency and productivity, a fax machine must be able to function as independently as possible. So when choosing a machine, look for





A full range of functions wins the Panasonic Panafax UF-250 four stars. The Sharp UX-350 offers some handy high-productivity features.

the basic productivity features such as an automatic document feeder, a paper cutter, automatic reception and disconnect, and autodialing capability.

**Maintenance.** Most fax machines require little more than adding a new roll of paper every now and then. As a precaution, learn what the error messages mean when you buy a new machine.

#### HOW MUCH SHOULD I SPEND?

Ten years ago, fax machines were too expensive for many small businesses. Today, you can get a basic unit for less than \$1,000. The home-office worker who needs several of the essential productivity features we've enumerated can meet his or her requirements for somewhere between \$1,500 and \$2,500. Looking over the following reviews and the accompanying chart should help make shopping a little easier.

#### Brother InstaFAX 300

**RATING:** ★ ★ ★

**SUGGESTED RETAIL PRICE:** \$1,395

For the budget conscious, the Brother InstaFAX 300 is an excellent machine at an excellent price. The unit transmits up to five 8.5-by-11-inch sheets automatically. A paper cutter trims incoming pages to the size of the originals.

You can call up to 60 telephone and fax numbers with the autodial feature. And the unit will give you an activity report of outgoing and incoming documents.

The InstaFAX 300 doesn't offer a super-fine mode, which means that photographs or any graphics that call for shades of gray won't transmit with the crispness offered by higher-priced machines. I would recom-

mend that only those whose documents consist primarily of text and line art, with perhaps an occasional graphic element, consider this unit.

As a basic send/receive machine, I like the InstaFAX 300. Not only does it perform well, but its compact size (16.4 by 11.2 by 5 inches) makes it easy to fit on a desktop. The Brother InstaFAX 300 is a great value.

#### Fujitsu dex 150 PowerFax

**RATING:** ★ ★ ★ ★

**SUGGESTED RETAIL PRICE:** \$2,399

The moment I opened the Fujitsu dex 150 PowerFax's box, I got the feeling that the makers of this outstanding fax machine had my needs in mind. A detailed, easy-to-read diagram showed me what was in the carton and told me how to unpack it, set it up, and

get it going immediately.

The dex 150 is packed with an impressive array of basic and advanced features. The unit offers automatic reception, autodialing of up to 76 fax and 76 telephone numbers, terminal identification, activity reports, voice request, delayed transmission, broadcasting, and polling.

The dex 150 also offers an image-reduction feature through which documents up to 9.8 inches in width can be reduced to a width of 8.5 inches.

You can ensure confidentiality by coding outgoing documents for security—designating them for one user's eyes only through a special password procedure.

The unit's memory stores up to 20 pages of text (fewer pages if complex gray-scale images are stored). This means you can store outgoing or incoming documents in memory. For some users, this feature alone may make the dex 150 worth the price.

Remote operation is another high-productivity feature of this machine. All you have to do is call the machine from a telephone and input commands on a touch-tone keypad.

Finally, the user's manual is a model of easy-to-use documentation. It is comprehensive, extremely well thought-out, and elegantly written.

The dex 150 costs more than any of the other fax machines reviewed here; however, the price is certainly right considering the outstanding features.

#### MANUFACTURERS MENTIONED

AT&T (212) 868-0870; Brother (201) 981-0300; Canon (516) 488-6700; Epson (213) 539-9140; Fujitsu (203) 796-5400; Lanier (404) 496-9500; Murata (214) 403-3300; NEC (516) 753-7406; Okidata (609) 235-2600; Panafax (516) 420-0055; Ricoh (201) 882-2258; Sharp (201) 529-8200; Toshiba (714) 583-3700; Xerox (212) 916-2500

#### MACHINE COMPATIBILITY

Virtually all fax machines currently available for the business and home-office markets are Group 3 machines. All Group 3 faxes can transmit a one-page document in less than a minute, with a resolution of at least 200 by 96 dots per inch. CCITT-standard fax machines are downwardly compatible; that is, any Group 3 fax can communicate with a Group 2 or Group 1 unit.

#### Panasonic Panafax UF-250

**RATING:** ★ ★ ★ ★

**SUGGESTED RETAIL PRICE:** \$2,295

If you only need to send and receive one- or



two-page documents, you probably don't need the Panasonic Panafax UF-250. But once you test-drive this outstanding fax machine, you may decide you've got to have it.

The UF-250 is a top-quality, handsome machine that can provide any home office with a complete range of basic and advanced functions. Virtually every function—including polling and broadcasting—is programmable for automatic operation.

You can place up to 30 pages into your automatic sheet feeder. With the autodial feature, you can program up to 100 telephone and fax numbers. The system offers three convenient types of speed dialing—one-touch, abbreviated, and redial.

A special XMT function enables you to set up an outgoing transmission even while your unit is receiving. And if necessary, you can send and receive documents confidentially—only someone with the correct password can print out the transmitted document.

You can also ask the UF-250 for a variety of system reports, including an activity re-

port and a list of programmed telephone and fax numbers, for example.

Unlike the other machines tested, the UF-250 comes with a pressure-sensitive keyboard rather than buttons. The keyboard is very smooth and easy to get used to.

Finally, the user's manual is outstanding—logical and easy to read. You also get a quick reference guide that briefly reminds you how to perform all the major functions.

The UF-250 costs more than many Group 3 fax machines; but if you're looking for a machine that can accommodate your growing needs, this may be the right choice for your home office.

#### Sharp UX-350

**RATING:** ★ ★ ★

**SUGGESTED RETAIL PRICE:** \$2,399

The Sharp UX-350 is a cost-effective fax machine that offers a full range of high-productivity features.

The UX-350 feeds up to 10 sheets auto-

matically and cuts incoming documents to the size of the originals. There are two levels of resolution—standard (203 by 96) or fine (203 by 196)—plus a special 16 gray-scale halftone mode.

You can program the UX-350 to automatically transmit a document at any time and also set the unit to poll other specified fax machines at a preset time for incoming documents and messages.

The user's manual is well written, easy to understand, and thorough. It includes a valuable section on troubleshooting, in order to avoid service calls.

What can't you do with this machine? For one thing, it doesn't offer automatic image reduction of oversize documents (wider than 8.5 inches). Nor can it broadcast, that is, send documents to multiple remote locations.

However, typical home-office workers are not likely to need either of these capabilities regularly, in which case the Sharp UX-350, at a suggested retail price of \$2,399, deserves your consideration. ■

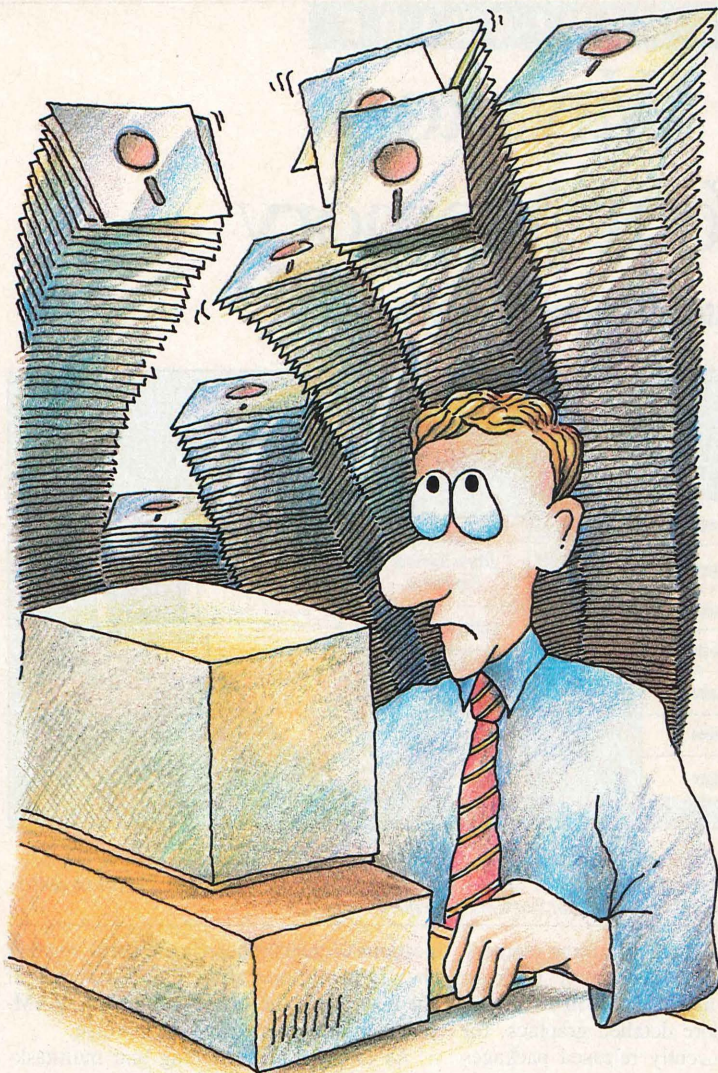
## GUIDE TO FAX MACHINES

What follows is a guide to facsimile machines for general home-office use from major manufacturers with nationwide distribution. We have included only Group 3 models with automatic document feeders and built-in telephones. All models have modem speeds of 9600 bps and automatic reception and disconnection. All models, except the Epson PriorityFax 1000 and Fujitsu dex 140 PowerFax include voice request. All models except Epson PriorityFax 1000 include polling and terminal ID.

Company/Model	Suggested Retail Price	Automatic Document Feeder (pages)	Automatic Paper Cutter	Paper Roll Length (feet)	LCD (characters × lines)	Super-fine Mode	Gray Scale Levels	Activity Reporting	Broad-casting	Delayed Trans-mission	Memory Dialer (fax/telephone)	Automatic Image Reduction	Memory (pages)	Remote Control	Warranty (months)
AT&T 4515D	\$2,195	10	Y	164	20 × 2	N	64	Y	Y	N	40/20	N	N	N	3
Brother InstaFAX 300	\$1,395	5	Y	98	16 × 1	N	16	Y	N	Y	10/10	N	N	N	3
InstaFAX 330	\$1,595	5	Y	98	16 × 1	N	16	Y	N	Y	10/10	N	N	N	3
InstaFAX 340	\$1,895	5	Y	98	16 × 2	Y	32	Y	Y	Y	10/10	N	14	N	3
Canon FaxPhone 20	\$1,995	5	N	98	20 × 2	N	8	N	Y	Y	26/26	N	3	N	3
FaxPhone 25	\$3,095	10	Y	98	20 × 2	N	16	N	Y	Y	40/40	Y	Y	N	3
Epson PriorityFax 1000	\$1,400	5	Y	98	18 × 1	N	8	N	N	N	20T	N	N	Y	12
PriorityFax 2000	\$1,600	5	Y	98	18 × 2	N	16	Y	N	Y	40T	N	N	Y	12
PriorityFax 3000	\$1,900	5	Y	98	16 × 2	N	16	Y	Y	Y	40T	N	28	Y	12
Fujitsu dex 140 PowerFax	\$1,949	20	Y	164	20 × 2	N	16	Y	N	Y	76/76	Y	N	N	3
dex 150 PowerFax	\$2,399	20	Y	164	20 × 2	N	16	Y	Y	Y	76/76	Y	20	Y	3
LanierFax 115AD	\$1,995	10	Y	165	16 × 2	N	16	Y	N	Y	30T	N	N	N	3
Murata M1400	\$1,199	5	N	98	20 × 2	N	16	Y	N	Y	100T	Y	N	N	3
M1750	\$1,399	5	N	98	20 × 2	N	16	Y	N	Y	100T	Y	16	N	3
M1800	\$1,399	5	N	98	20 × 2	N	16	Y	N	Y	100T	Y	16	N	3
NEC NEFAX 200	\$1,695	5	N	164	16 × 1	N	16	Y	N	N	50T	N	N	Y	6
NEFAX 300	\$2,195	10	Y	164	16 × 1	N	16	Y	Y	Y	100T	Y	7	Y	6
Okidata Okifax 500	\$1,899	10	Y	164	20 × 2	N	16	Y	N	Y	30T	N	N	Y	6
Okifax 700	\$2,299	40	Y	328	20 × 2	Y	16	Y	Y	Y	100T	Y	N	Y	6
Okifax 800	\$2,799	40	Y	328	20 × 2	Y	16	Y	Y	Y	100T	Y	15	Y	6
Panasonic Panafax UF-250	\$2,295	30	Y	328	20 × 2	Y	16	Y	Y	Y	100/100	Y	N	N	3
Ricoh RF850	\$1,595	5	N	98	20 × 2	N	8	Y	N	Y	80T	N	N	N	3
RF900	\$1,895	5	N	98	20 × 2	N	8	Y	N	Y	92T	N	7	N	3
RF920	\$2,295	10	Y	164	20 × 2	N	64	Y	N	Y	115T	N	N	N	3
Sharp UX-180	\$1,899	10	N	98	16 × 2	N	16	Y	N	Y	32/32	N	N	N	3
UX-350	\$2,399	10	Y	164	16 × 2	N	16	Y	N	Y	70/70	N	N	N	3
Toshiba Model 3300	\$1,395	5	N	98	20 × 1	N	16	Y	N	Y	30/30	N	N	N	12
Model 3600	\$1,695	10	Y	98	20 × 1	N	16	Y	N	Y	30/30	N	N	N	12
Model 3700	\$1,995	10	Y	164	20 × 1	N	16	Y	N	Y	30/30	N	N	N	12
Xerox Telecopier 7012	\$2,295	15	Y	164	20 × 2	Y	16	Y	N	Y	98	N	N	N	3

N = No; T = Total number that can be used for either telephone or fax; Y = Yes





# The reasons to use tape keep stacking up.

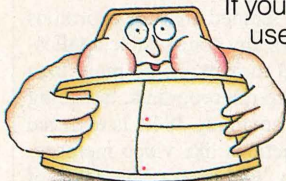
And up. And up.

In fact, it would take a stack of 166 standard floppies to back up a 60MB hard drive.

But an ArchiveXL™ tape system brings backup back down to a manageable level. All the data on your hard disk will fit on just one tape—up to 124MB using our new 80MB drive with an extended length tape cartridge.

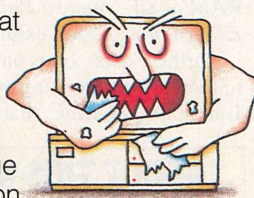
If you're like most users, data is building up on your hard disk fast. Desktop publishing, database, CAD

and graphics files consume massive amounts of your disk's capacity. Unless you archive older files, you'll run out of space in a hurry.



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Just think how long it would take to rebuild a mailing list, to re-layout a 20-page publication or to recreate all your accounting records.



Since you never know when your operating system might hiccup, when the computer might catch a virus or when

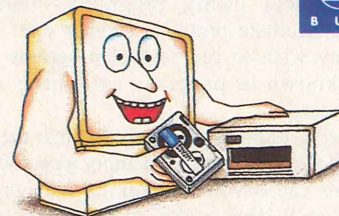
you might commit one of a zillion possible operator errors, your backup has to be "restore ready"



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# Three Ways to Improve Your Memory

BY HENRY F. BEECHHOLD AND EDWARD P. STEVENSON

## Reviews of EMS Boards For XT's and AT's

Memory space: the last frontier. Of all the facets of personal computer technology, memory is perhaps the most mysterious.

What is memory for? How does it work? How much is enough? Can I have more? If I get more, will it help me get my work done?

If you have pondered such questions, you are not alone. This miniguide will delve into these mysteries and attempt to resolve them in conjunction with reviews of three memory expansion devices commonly known as EMS boards. (Readers for whom these questions hold no mystery can skip directly to the reviews.)

First, a definition: Computer memory, commonly called random access memory, abbreviated RAM, is the network of electrical circuits in which the computer stores the program code and the data it's working with at the moment. Sometimes referred to as read-and-write memory, it's the computer's work space, rather like a blackboard, on which formulas, equations, notes, prose, poetry, or any other information can be written, rewritten, moved around, and otherwise manipulated.

Now, let's tackle the central question:

**Q. Why do I (might I) need or want to add memory to my computer?**

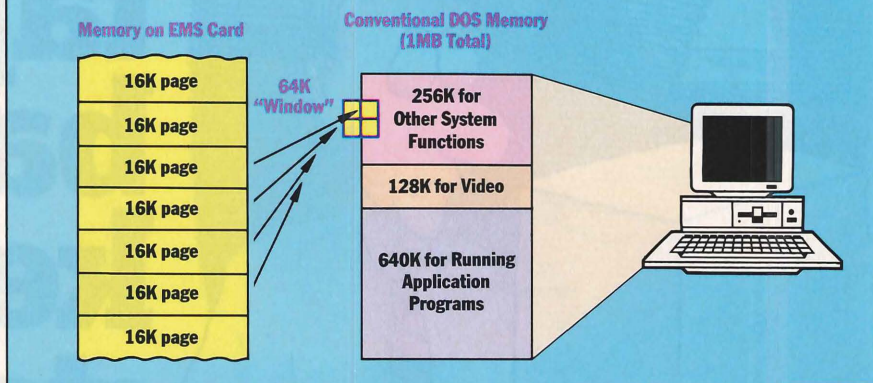
**A.** Briefly: 1) You may not have enough memory to efficiently run even one large program. 2) You may wish to use so-called RAM-resident utility programs, which would exacerbate problem number one. 3) You may wish to run several programs at once (known as program switching or multitasking).

A crucial thing to understand is that there is a limit to the amount of memory a personal computer can devote to working with programs (we'll discuss this in greater detail below). This is the source of all the complications. Newer application software packages tend to be bigger (contain more program code) than older ones—to the point that many popular PC packages bump up against

HENRY F. BEECHHOLD is a contributing editor to HOME-OFFICE COMPUTING. EDWARD P. STEVENSON is senior technical editor.

Figure 1.

### Breaking the 640K Barrier: How Expanded Memory Works



EMS borrows unused addresses from the "Other System Functions" portion of conventional memory and assigns them temporarily to blocks or "pages" of additional memory. DOS then sees the pages as being part of conventional memory and can work with them.

this limit. In such a situation, more memory means room for more data: more rows on your spreadsheet, more records in your database, bigger or more detailed graphics, for example. Some recently released packages don't really fit in the standard amount of RAM at all. *Ventura Publisher Professional Extension* is a good example.

Further, many of us have become addicted to memory-resident utility programs, such as Borland's *SideKick*, that take up significant

portions of the computer's memory, whether they're being used at the moment or not. If there's a RAM shortage to begin with, RAM-resident programs will make it worse.

As to program switching and multitasking—using more than one program at a time—it's fairly clear that if one heavy-weight application program bumps up against the limits of memory, two or three or four are certainly going to exceed it, probably by a lot.

**Q. What is the memory limit on a personal computer?**

**A.** The memory limit is actually imposed by the operating system, MS-DOS. DOS cannot use more than one megabyte (1MB) of RAM. This limit is a fundamental design specification. (When DOS was designed years ago, sophisticated PCs had 64K of RAM, and 1MB seemed like an enormous amount, enough for any conceivable application.) Of the 1MB maximum, no more than 640K can be used to run programs, including DOS itself. (The remaining 384K is reserved for "system" functions like video memory. See memory map, Figure 1.) The 1MB of RAM that DOS can utilize is known as *conventional memory*.

**Q. But I see computers advertised for sale these days with two or more megabytes of memory; why is that?**

**A.** Any RAM beyond the 1MB DOS limit is referred to as *extended memory*. By definition, then, a system with 2MB of RAM has

## ABOUT THIS MINIGUIDE

This month, we look at three memory add-in cards. These products are made by well-established companies with excellent reputations for quality and customer support. All three cards work with 286-based systems. One, the Intel Above Board Plus, also works with 8088- and 8086-based systems.

## REVIEWED IN THIS ISSUE

### Laptop Computer:

Micro Express Lyte-Byte 3400

### EMS Boards:

Intel Above Board Plus

AST RampagePlus 286

Bocaram/AT Plus

### Printer:

Hewlett-Packard DeskWriter

### Hand-Held Organizer:

Atari Portfolio

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AT&T 622



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1MB of conventional memory and 1MB of extended memory.

**Q. What's extended memory good for if DOS can't use it?**

**A.** There are three ways that extended memory is commonly put to work in a DOS-based system: as a "virtual disk" or "RAM disk" (a chunk of RAM functioning as a disk drive); as a "disk cache" (a chunk of RAM where information from frequently accessed parts of a disk are stored); as a "print spooler" (a chunk of RAM where a data file can be dumped to be fed to a printer.) All of these contribute to overall system efficiency. Incidentally, all of the boards reviewed here come with software for setting up both a RAM disk and a print spooler.

**Q. Fine, but what about multitasking, RAM-resident programs, and all that? Is there a way to increase conventional memory?**

**A.** Strictly speaking, the answer is no. On a practical level, the answer is yes.

Engineers have devised some tricks that make additional memory available for normal computing functions. RAM that has been accessed in this way is known as *expanded memory*, and is normally located on a plug-in EMS board. This is what most power users have in mind when they think about cramming multi-megabytes of RAM into their systems, and that's also what EMS boards, the subject of this miniguide, are all about.

**Q. How is this done?**

**A.** This gets a little tricky. DOS keeps track of RAM in blocks, by means of addresses. The inventors of memory-management software figured out that by manipulating (changing) addresses, they could fool DOS into seeing 16K blocks or "pages" of expanded memory as conventional memory, juggling them as necessary. One system for doing this is known as the Lotus-Intel-Microsoft (LIM) Expanded Memory Specification, or EMS. The latest version, 4.0, is a sophisticated system in which hardware and software work together. *NOTE: EMS works only with application software specifically written to make use of it.*

## A NOTE FOR OS/2 USERS

The new Microsoft-IBM operating system, OS/2, doesn't suffer from the 640K limitation. In fact, OS/2 requires something in the realm of 4MB to work comfortably. The new operating system is able to address and utilize 16MB of memory directly, so the need for memory-management software is eliminated. Nonetheless, you will still need to find a way to stuff those extra megs of memory into your machine. Make sure you select a memory expansion board that supports *extended* memory. You won't be able to make use of the memory-switching magic of the LIM expanded memory specification with OS/2.

**Q. How much memory do I need?**

**A.** Only you can say for sure. You have to evaluate your software needs and your work style. Are you going to be using a program like *Ventura Publisher* that works best with 2MB to move around in? Is multitasking or program switching important to the way you like to work? Might it be in the future? If so, what programs are you likely to be working with? How much memory does each require? Do you use RAM-resident programs? Depending on the specific answers to these and similar questions, you might conclude that you don't need any extra RAM (if, for example, your work is confined to word processing on an XT) or that you need many megabytes of expanded memory. Using your estimate as a rough guideline (assuming that you do need to add memory), look for a board that leaves you some extra room. Experience suggests that we almost always end up wanting more memory than we ever believed we could use at the outset.

**Q. What's the best way of adding memory to my computer?**

**A.** This depends on your computer.

If you have a PC or XT, you should first see whether the motherboard is fully populated, that is, whether all the RAM-chip sockets are filled. If not, install appropriate RAM chips in the empty sockets. If you need more memory, you will have to install an EMS board specifically designed to work with an 8-bit microprocessor.

If you have a 286-based computer, you may want to fully populate the motherboard before adding a memory card; then again, you may not. Many 286 machines can hold as much as 4MB on the motherboard. *And*, some of the newer 286s have built-in support for EMS, in which case, you would need only to add memory-management software such as *QEMM*, from Quarterdeck. An add-in board would be necessary only if your system's built-in RAM capacity is insufficient for your needs. If your 286 lacks built-in EMS support, you could use any extra RAM installed on the motherboard as extended, but not expanded, memory. If you need expanded memory, then your only option is to install an EMS card designed to work with the 286 microprocessor. In either case, if you install an add-in board, make sure it is rated to work as fast as your microprocessor.

Virtually all 386-based computers have room on the motherboard for several megabytes of RAM. As with other computers, your first move should be to fully populate the motherboard. If you need more memory than the motherboard can hold, your best bet is to obtain the proprietary memory card (available from the manufacturer) that fits into the special 32-bit memory expansion slot. With a 386, you don't have to worry about EMS support; it's built into the micro-

processor. Just add memory-management software and you're in business.

**Q. How do I install a memory add-in board?**

**A.** A memory add-in board looks just like any other IBM-type expansion card. It is installed the same way, too. You open your computer, select an open expansion slot of the proper length, remove the slot cover, plug the board into the slot, and screw it in.

EMS cards also need to be configured. Some require that you set DIP switches on the card (best done before the card is installed). Others are configured after installation by means of menu-driven software routines. Some configure themselves automatically through the installation software. Many EMS boards (including all three of the units reviewed here) allow you to divide up the RAM they hold, designating portions as conventional (if your motherboard doesn't hold 640K), extended, or expanded, as needed.

## TERMS TO REMEMBER

**Conventional memory.** The RAM that MS-DOS can use directly. The maximum is one megabyte, of which only 640K is available for running application programs.

**EMS.** Standing for *Expanded Memory Specification*, it is shorthand for *Lotus-Intel-Microsoft Expanded Memory Specification*, a system by which extended memory is converted into expanded memory. Also known as LIM.

**Expanded memory.** RAM manipulated by memory-management software to look and act like conventional memory.

**Extended memory.** Any RAM installed in the system that exceeds the limits of conventional memory; that is, any RAM beyond 1MB.

**Kilobyte (K or KB).** The smaller of the two units in which microcomputer memory is generally measured. One kilobyte is 1,024 bytes (characters) of data.

**LIM.** Standing for *Lotus-Intel-Microsoft*, it is shorthand for *Lotus-Intel-Microsoft Expanded Memory Specification*, a system by which extended memory is converted into expanded memory. Also known as EMS.

**Main memory.** An imprecise term, generally used synonymously with conventional memory.

**Megabyte (MB).** The larger of the two units in which microcomputer memory is generally measured. One megabyte is 1,048,576 bytes (characters) of data.

**Memory-management software.** Software that allows the system to circumvent the limitations of normal DOS memory.

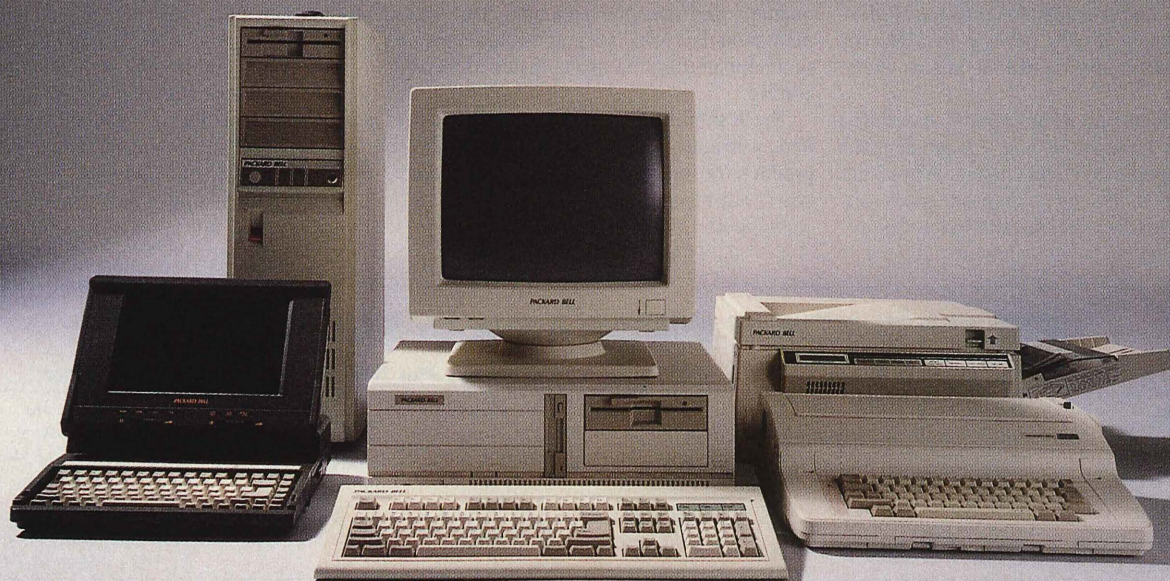
**Motherboard.** The computer's main circuit board. On it are usually mounted the microprocessor and the system memory chips (among other components). Synonymous with "system board."

**System memory.** 1) The amount of RAM installed in a given system. 2) The maximum amount of memory that can be installed in a system without the addition of a memory expansion card.



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## Intel Above Board Plus

RATING: ★ ★ ★

The original Above Board was the first true EMS board, since it was built around the specification that Intel participated in devising. Many other boards have subsequently been designed to take advantage of EMS, however, and Intel's position as pioneer in the field is no longer significant. The Above Board Plus stands on its own merits; it is a fine product, a well-made and faultless performer. But it offers no special advantages over other products available at equal or lower cost.

Attention XT users: This is the only board of the three reviewed here designed to work in both XT- and AT-type computers (computers with either an 8-bit or 16-bit CPU). To use it with an XT, you will need to plug in a special chip (included) before installing the device. Once the board is installed, you run the installation software, which will (at your discretion) partition the added RAM into conventional, extended, and expanded segments.

The Above Board Plus works well with CPU clock speeds up to 12.5 MHz. (XTs run at speeds between 4.77 MHz and 10 MHz; ATs run at anywhere between 6 MHz and 20 MHz.) If you have a 16-MHz (or faster) system, this board is not a viable choice.

Intel's documentation includes a detailed manual for newcomers and a shortcut manual for experienced DOS users. These are supplemented by more-than-adequate on-screen help from the installation software.

The Above Board Plus carries a generous five-year warranty, and Intel provides toll-free telephone technical support.

## AST RampagePlus 286

RATING: ★ ★ ★

The AST RampagePlus 286 is in the same price range as the Intel Above Board Plus, but it offers more flexibility and expansion. Not only does this card have sockets for up to 8MB of RAM chips, it offers (optional) piggyback serial and parallel ports.

As with most sophisticated EMS boards today—including those reviewed here—all configuration for the RampagePlus is handled through software. The installation program is menu driven and easy to use. It allows you to allocate memory (conventional, extended, and expanded) any way you wish. RampagePlus is compatible with all application software that's designed to work with LIM 3.2 or 4.0.

Once installed and configured, the card simply fades into the background and does its job. Like the Above Board Plus, it works well with CPUs that have clock speeds up to 12.5 MHz.

AST provides hardware and software manuals and assorted addenda. This documentation is clear, so you should have no problems getting the board installed and operating.

The RampagePlus carries a two-year limited warranty. Although AST provides a product information hotline (not toll free), you'll have to rely on your dealer for technical support.

## Bocaram/AT Plus

RATING: ★ ★ ★

Boca Research has built its reputation on low-cost add-in cards. Manufactured to high standards, these products are noted for reliability and clever design. The Bocaram/AT Plus is no exception; this card is easily the best value around. One potential money-saving aspect of this product is that it is one of the few you can buy "unpopulated"—that is, without RAM chips. This means you can supply your own RAM, presumably procured by you at a lower price than the one charged by Boca.

Like the RampagePlus, this card accommodates a maximum of 8MB of RAM, which can be configured just about any way you want (allocated as conventional, extended, or expanded). A feature that sets it apart from the other products reviewed here is that the Bocaram/AT Plus is designed to work with CPU speeds of up to 33 MHz, the fastest currently available.

Installation of the Bocaram/AT Plus board requires nothing beyond plugging it into an empty 16-bit slot. The board is self-configuring; to put it to work, you merely run the supplied installation software and follow the clear instructions. If you have difficulty, there is a manual to guide you.

The warranty period is two years (but RAM chips not installed by Boca are not covered). Boca has a generous 30-day, no-questions-asked, full-refund return policy in case you decide that the card isn't for you. Telephone technical support is available (your nickel). ■

## THREE ADD-IN MEMORY BOARDS: A SIDE-BY-SIDE COMPARISON

Model	Intel Above Board Plus	AST RampagePlus 286	Bocaram/AT Plus
Manufacturer	Personal Computer Enhancement Operation Intel Corp. Hillsboro, OR 97124 (503) 629-7354	AST Research, Inc. 2121 Alton Ave. Irvine, CA 92714 (714) 863-1333	Boca Research, Inc. 6401 Congress Ave. Boca Raton, FL 33487-2841 (407) 997-6227
Suggested Retail Price	\$695 (512K)	\$695 (512K)	\$225 (empty); \$695 (2MB); \$1,195 (4MB); \$2,195 (8MB)
Rating	★ ★ ★	★ ★ ★	★ ★ ★
Hardware Requirements	IBM PC/XT/AT or compatible	IBM AT or compatible	IBM AT or compatible
Maximum Recommended CPU Clock Speed	12.5 MHz	12.5 MHz	33 MHz
CPU Compatibility	8088, 8086, 80286	80286	80286, 80386
RAM Capacity and Type <sup>1</sup>	2MB (maximum 8MB with piggyback board); DIP	8MB; SIMM	8MB; DIP
Warranty (years)	Five	Two	Two <sup>2</sup>
Options	Piggyback RAM board, \$1,445 (with 2MB; additional 4MB can be installed by user)	Add-on board for serial and parallel ports, \$95	None

Configuration for these three products is handled through the installation software. All three boards can allocate RAM as conventional, extended, or expanded; all three offer EMS 3.2 and 4.0 compatibility. Each of the units comes with diagnostic software and installation, memory-management, print-spooling, and RAM-disk utilities. **KEY** <sup>1</sup>Plug-in memory comes in two forms: single, socketed chips (dual in-line packet [DIP]), and mini circuit boards holding 256K-1MB each (single in-line memory modules [SIMM]) <sup>2</sup>Plus 30-day money-back guarantee



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Each month, HOME-OFFICE COMPUTING's Hardware Reviews take an in-depth look at new and worthwhile computers, peripherals, fax machines, copiers, phones, and other hardware.

Our reviewers set up the equipment in their own home offices. After heavy use and extensive testing, they rank each item on the basis of suitability for the home office and on overall value, taking into account performance, features, ease of setup, ease of learning and use, documentation, size, expandability/versatility, support, availability, warranty, and value for the money.

Then, the HOME-OFFICE COMPUTING Hardware Testing Lab conducts its own battery of tests (a printer speed test, for example) and verifies manufacturers' specifications. Finally, our technical editors weigh the reviewers' rankings, the lab test results, and their own experience to determine an overall rating on a scale of zero to four stars:

○	Poor	★★★	Very Good
★	Average	★★★★	Excellent
★★	Good		

## Fast, AC-Powered Laptop

### Lyte-Byte 3400 Portable Computer

Micro Express, 1801 Carnegie Ave., Santa Ana, CA 92705; (714) 852-1400, (800) 642-7621

**RATING:** ★ ★

**SUGGESTED RETAIL PRICE:** \$2,995, plus shipping

**MICROPROCESSOR:** Intel 80286 (16 MHz, zero wait states); socket for 80287 (math coprocessor)

**MEMORY:** 1MB, expandable to 5MB; page-mode memory management; built-in LIM expanded memory support

**DISK DRIVES:** 40MB hard-disk drive (23 milli-second access time) and 3.5-inch, 1.44MB floppy-disk drive

**DISPLAY:** 640 by 400 gas plasma (orange on black); compatible with MDA, CGA, EGA

**FREE EXPANSION SLOTS:** One 16-bit, half-length

**PORTS:** One 9-pin serial, one RS-232C serial, one parallel, external floppy-disk drive, keyboard, and RGB video connectors

**DIMENSIONS:** 14.8 by 3.7 by 13.4 inches



**WEIGHT:** 15 pounds

**OPTIONS:** External 5.25-inch, 1.2MB floppy-disk drive (\$149); MS-DOS 3.3 (\$79); MS-DOS 4.0 (\$89); 2400-bit-per-second external modem (\$249)

**WARRANTY:** One year (90 days for floppy-disk drive)

Finding the one portable computer that does everything you need can be an arduous quest. The selection process often involves weighing feature against feature and deciding which are essential and which you can live without. Arriving at a final choice typically means accepting a few compromises, sometimes more than a few.

I have to say at the outset that although the Micro Express Lyte-Byte (an ill-chosen name, incidentally) has definite strengths, it is not, to my mind, the elusive laptop that has it all.

Let's start with the positives. The specifications tell much of this story. The Lyte-Byte is a fast, powerful computer, one of a small number of current 80286-based laptops that run at 16 MHz. Its inherent speed is augmented by several performance-enhancing design features. The Lyte-Byte also contains an available (half-length) expansion slot and a 40MB hard-disk drive.

Further, the 3400's display and keyboard are both first rate. The layout of the 85-key keyboard is familiar and logical—function keys above and numeric keypad to the right.

The amber-on-black characters of the gas-plasma display are crisp, clear, and readable under any lighting conditions. The Lyte-Byte's screen tilts through a 130 degree range, but I found it unnecessary to fiddle with this, since viewing angle is not critical with gas plasma, as it is with LCD. Glare is not a problem, even in direct light. Slide bars for both brightness and contrast are

located under the screen's on-off switch. Once I had set these to my liking, I never adjusted the screen again.

Now for the potential negatives: First, this powerful package has no batteries; it operates only from an AC power source. This will eliminate it as a contender for those who work on planes or trains.

The 3400 has the laptop's classic clam-shell design, but it's very hefty. Few, I think, would feel comfortable supporting its 15 pounds on their knees. Furthermore, I found the carrying handle inadequate to support the unit's weight. After it fell off twice, I chose not to rely on the handle any more.

Fortunately, the computer comes with a carrying case and shoulder strap, which make toting the unit safe.

Overall, if you need a fast 286 computer with a capacious hard-disk drive and a readable screen, the Lyte-Byte 3400 is worthy of consideration. On the down side, it's definitely overweight, unfortunately AC-dependent, and—priced at \$2,995, plus shipping—a bit steep for a mail-order computer.

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## High-Resolution Ink-Jet Printing For the Mac

### Hewlett-Packard DeskWriter

Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA 95014; (800) 752-0900

**RATING:** ★ ★ ★ ★

**SUGGESTED RETAIL PRICE:** \$1,195

**HARDWARE REQUIREMENTS:** 1MB Macintosh; hard-disk drive; System 4.1 or higher

**INTERFACE:** Standard Macintosh 8-pin mini-DIN serial

**TYPE:** Thermal ink-jet

**PRINT BUFFER:** 12K

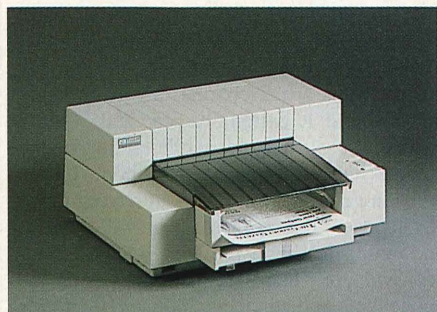
**TEXT PRINT SPEED:** Dependent on Macintosh used. Reviewer's findings (using a standard SE): best quality (300 dots per inch [dpi]), 183 seconds per page; faster quality (150 dpi), 42 seconds per page

**PAPER TRAY:** One (100 sheets)

**PAPER SIZES:** 8.5 by 11, 8.5 by 14 inches, European A4



**MAXIMUM GRAPHICS RESOLUTION:** 300 by 300 dpi  
**TYPEFACES SUPPLIED:** Times, Helvetica (proprietary), Courier, Symbol  
**OPTIONAL TYPEFACES:** Seven (\$95 each, \$395 for all seven)  
**PRINTERS EMULATED:** None  
**DIMENSIONS:** 17.3 by 8.0 by 14.8 inches  
**WEIGHT:** 14.3 pounds  
**WARRANTY:** One year



Until the Hewlett-Packard DeskWriter came along, Macintosh users had but two choices of printing technology: dot matrix or laser. They can now add high-resolution thermal ink-jet printing to the list.

An ink-jet printer creates an image made up of dots, just like dot-matrix and laser printers, but it makes its dots by firing tiny drops of liquid ink at the paper. The dots can be packed very closely together—as close as 300 per inch, the same resolution as today's standard laser printers. Indeed, the appearance of the DeskWriter's output is very similar to that of a laser printer.

If you need (or simply want) near-laser print quality but can't afford the \$2,000 to \$5,000 a PostScript or other Macintosh-compatible laser printer costs, you'll want to take a close look at the DeskWriter, since it's often discounted to well under \$1,000.

The DeskWriter is quite compact (not much bigger than my ImageWriter II, in fact), which makes it suitable for most home offices. With the printer you receive an owner's manual, a power cord and external power supply, and one ink-jet cartridge (the replaceable unit that contains the ink and the nozzle). Also included are three disks containing the DeskWriter printer driver and both printer and screen fonts for the four included typefaces. (The required serial printer cable must be purchased separately.)

Unpacking and setting up the DeskWriter was easy. I had to put the printer on its side in order to plug in the power cord and serial cable (as suggested in the clearly written and well-illustrated manual). The ink-jet print cartridge simply snapped into its cradle. Software installation—printer driver and fonts—was typically Mac-easy.

The DeskWriter accepts plain paper (approximately 100 sheets in an easy-to-load paper tray). I tried both standard photocopy-

ing paper and high-quality bond; both worked well. The printer also handles standard business envelopes, but only hand-fed one at a time.

Two print modes are available: a 300 dot-per-inch (dpi) "best quality," which approaches the appearance of laser printing, and a 150 dpi "faster quality." All fonts print in either vertical (portrait) or horizontal (landscape) orientation, and you can reduce or enlarge a document by 25 to 400 percent.

The DeskWriter is not silent (the print-head makes a hushed chuffing sound as it passes over a page), but it's much quieter than a dot-matrix printer.

The four supplied typefaces—Times, a version of Helvetica, Courier, and Symbol—correspond to four that come with the LaserWriter and most other PostScript-based laser printers. On the DeskWriter, they can print in sizes between 4 and 250 points without distortion. For those who want a complete match with the LaserWriter's 11 built-in typefaces, the additional seven faces can be purchased as a set for \$395 (or \$95 each).

The DeskWriter prints bit-mapped graphics, such as those produced in *MacPaint*, *SuperPaint*, or *Excel*, with excellent, rich blacks. Those who print full-page graphics often should keep in mind that the DeskWriter uses up ink quickly. One new ink-jet cartridge (about \$20) gave out after about 60 graphics-only pages.

When I printed big text jobs—50 pages or more at a time—the DeskWriter was a real workhorse. Paper fed smoothly through the mechanism without jamming, and the print quality remained consistently high.

How does the DeskWriter compare to a Mac laser printer? Let's talk quality first. If you look carefully, you will see more jagged contours on 300-dpi text produced by the DeskWriter; liquid ink inevitably spreads out a little in the paper fiber. Liquid ink is also water soluble, so it runs if you wet it. On the other hand, the DeskWriter's handling of bit-mapped (not PostScript) graphics is noticeably superior to a laser printer's. How about cost? The Apple LaserWriter SE—which, like the DeskWriter, uses the Mac's built-in QuickDraw page description language—costs more than twice as much. If you want a PostScript printer, count on paying more than three times what you'd pay for a DeskWriter.

I would say that the DeskWriter's quality-to-cost ratio exceeds that of any other Macintosh printer. Where cost is a significant consideration, the DeskWriter may be the single best printing option for the Mac. It's so good that I'd like to buy the unit sent to me for review. When a reviewer is willing to pay his or her own money for a product, that's the ultimate compliment.

CIRCLE READER SERVICE 102—DAVID HALLERMAN

## Pocket Organizer Plus

### Atari Portfolio

Atari Corporation, 1196 Borregas Ave., Sunnyvale, CA 94086; (800) 443-8020 or (408) 745-2000

**RATING:** ★ ★ ★

**SUGGESTED RETAIL PRICE:** \$400

**MICROPROCESSOR:** 80C88 (4.92 MHz)

**OPERATING SYSTEM:** Proprietary (MS-DOS 2.11-compatible)

**MEMORY:** 128K (expandable to 640K)

**DISPLAY:** LCD, 40 characters by 8 lines

**KEYBOARD:** 63 keys, QWERTY layout

**FUNCTIONS:** Address/Telephone Directory, Touch-Tone Dialing, Calculator, Diary/Calendar, Text Editor, Spreadsheet, Clipboard

**PORTS:** Proprietary serial, parallel ports (require appropriate interfaces), proprietary 60-pin bus connector

**DIMENSIONS:** 7.8 by 4.1 by 1.2 inches

**WEIGHT:** Just under 1 pound

**POWER:** Three standard AA batteries or AC adaptor (optional)

**OPTIONS:** 32K, 64K, 128K RAM cards (\$80, \$130, \$200); external PC card drive (\$100); serial interface (\$80); parallel interface (\$50); AC adaptor (\$10); memory expander plus (256K; \$230)—Portfolio accommodates two, bringing RAM to 640K.

**WARRANTY:** 90 days



Atari's new Portfolio "palmtop computer" is an electronic organizer with some extras that may mean a lot to you. It possesses most of the features found in hand-held organizers of comparable size and price, but it is also capable of running specially adapted MS-DOS software (in preparation), and it offers built-in spreadsheet and text-editing capabilities now.

I quite like the basic look and feel of this machine. It is extremely portable, fitting easily into a briefcase or jacket pocket. Its built-in functions are menu-driven and simple to use. And the keyboard, unlike those



on many other electronic organizers available today, uses the standard QWERTY layout—which means you don't have to play hunt-and-peck if you know how to type.

**Portfolio as Organizer.** Portfolio's easy-to-use calculator performs a full range of math functions—the standard arithmetic ones plus factorials, square roots, and percentages.

Storing and retrieving information to and from the built-in address and telephone directory are straightforward operations. Once you've located a number in the directory that you want to call, Portfolio can actually do the dialing for you (if you have touch-tone service): Just hold the unit against the telephone mouthpiece and press a key; a built-in speaker issues the correct tones.

The system's diary/calendar function helps you organize your life. Codes displayed on a standard monthly calendar page indicate days with scheduled appointments. You can move freely around the calendar and call up (zoom in on) any date to see that day's appointments. In diary mode, you can enter and edit notes for any time of a given day. You can set an alarm buzzer to remind you of special appointments.

**Portfolio as Computer.** What makes Portfolio different from other electronic organizers is that it is also a fully programmable computer (Portfolio BASIC is in the works), offering built-in text editing and spreadsheet capabilities. The ASCII text editor performs basic word-processing functions easily. Features include cut and paste, search and replace, and word wrap. Once you've created text, you can move it to other applications within the system through a copy-transfer feature called Clipboard.

The spreadsheet, Portfolio Worksheet, produces files compatible with Lotus .WKS and .WK1 files. You can create spreadsheets on Portfolio—entering data and formulas, loading and saving files, and generating reports—or download files from your desktop computer and work on them away from your office. (File transfer, a menu-driven function accomplished through the parallel ports in both machines, requires that you fit your Portfolio with an optional parallel interface.) You may find, however, as I did, that the viewing area of the Portfolio display is small enough to make serious spreadsheet work difficult.

I can't say I was happy with Portfolio's documentation. The manual is quite lengthy, and I had to hunt around for key information. But help is reportedly on the way: Atari promises a Quick Reference Guide, which will enable users to learn the system more efficiently, and an index to the manual. Neither was available at press time.

Portfolio offers essentially the same functions as hand-held electronic organizers such as the Psion Organiser II, Model LZ, and the Sharp Wizard, Model OZ-7000 (re-

viewed in the October 1989 issue, page 68). But the expanded applications capabilities, plus the promise of a programming language and additional MS-DOS software, really put it in a different category—as does the price; approximately \$100 more than the others.

How to choose? If you're looking for organizer features only, you may not feel that the Portfolio is worth the extra money, although the QWERTY keyboard alone may justify the price difference. If true pocket-PC functionality will be useful to you, there's no contest. Try it out and see.

CIRCLE READER SERVICE 103 —FRAN CHESLEIGH

## Talented Two-Line Telephone



### AT&T Two-Line Speakerphone 622

AT&T Consumer Products, 5 Wood Hollow Rd., Parsippany, NJ 07054; (201) 581-3000

**RATING:** ★ ★ ★

**SUGGESTED RETAIL PRICE:** \$120

**TYPE:** Two-line speakerphone

**FEATURES:** Speakerphone; flash; hold; mute; tone-pulse dialing; automatic redial; conference calling

**MEMORY:** 16 numbers

**DIMENSIONS:** 9.5 by 8 by 4 inches

**WARRANTY:** Two years

Lots of people with home offices like to have two phone numbers. It's handy (sometimes crucial) for keeping calls separate—personal calls from business calls, or accounting calls from marketing calls, for example. You can, of course have a telephone for each number, but a two-line phone takes up less space and is likely to be cheaper than two phones, and it certainly simplifies the process of manipulating calls.

The AT&T 622 is a first-rate home-office tool. It does what a two-line phone needs to do (handle calls on two phone lines, which, admittedly, doesn't qualify as a technological miracle these days) and does it faultlessly. An added bonus is its high-quality

speakerphone, which turns out to be quite a useful feature.

Most calls I made on the speakerphone attracted no comment from the other end, which is how it should be. People who were aware of the speakerphone said it sounded fine or pretty good, except for one curmudgeon who said it sounded like I was in a tunnel. In all cases I could hear the voice on the other end of the line perfectly. The 622's hands-free microphone is quite sensitive; it can successfully transmit a voice from 10 feet away or more.

Although many executives with private offices use a speakerphone mostly to show off, I found it extremely practical when I needed to use my hands while talking on the phone. Just push the speakerphone button and you get a dial tone without having to lift the handset. Punch in the number (or push one button to dial a previously saved number) and your hands remain free while the phone dials and connects. You can then pick up the handset or continue to talk through the speakerphone. I did the latter when I needed to type, rummage through a pile of papers, or move to my file cabinet.

The 622 is slightly larger (about a half-inch wider and an inch longer) and more solidly constructed than either the AT&T 412 two-line phone or the AT&T 422 two-line speakerphone (earlier models). The 622 holds up to 16 numbers in memory for automatic, one-key dialing (compared to 12 for the aforementioned models). The unit uses three AA batteries for memory backup. There are four sliding controls on the right-hand side of the base (sculpted so you can fit your fingers in without looking) for adjusting the volume on the handset, the speakerphone, and the ringers on each line.

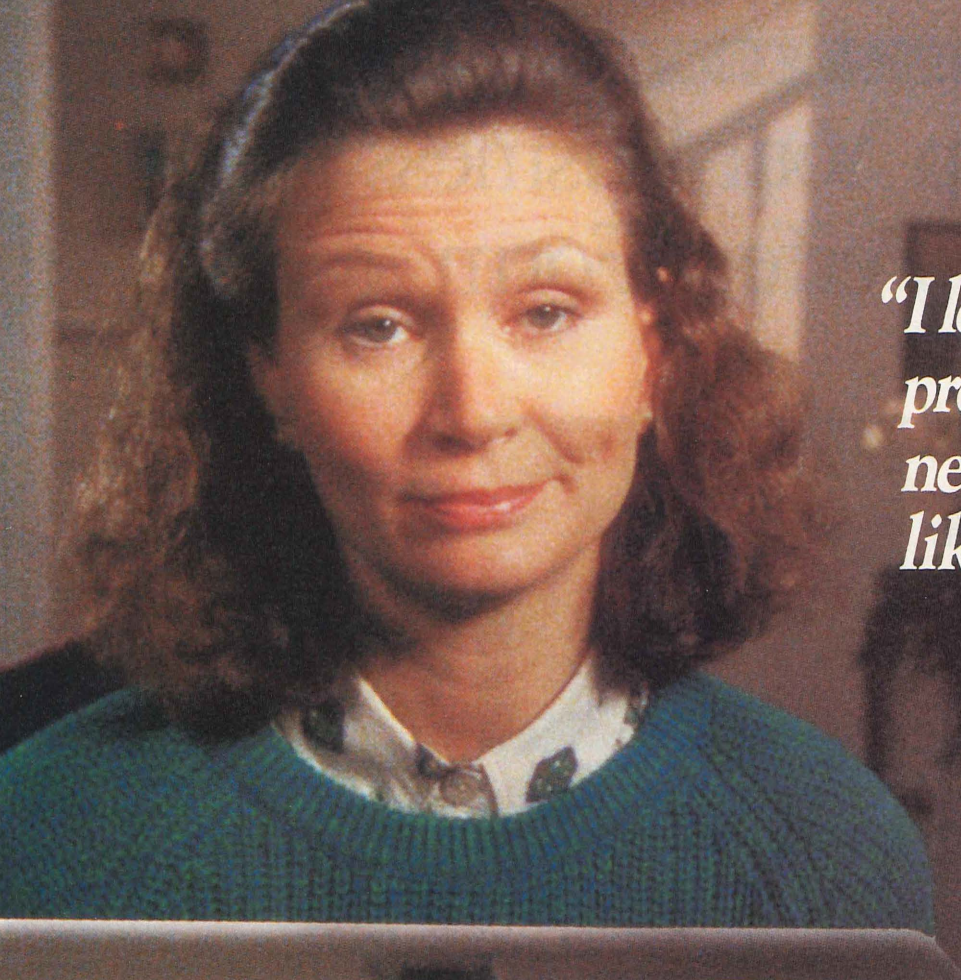
The 622 is equally at home mounted on the wall or sitting on the desktop. It has a Tone button for switching back and forth between pulse and touch-tone dialing and a Mute button that disconnects whichever microphone you're speaking through, shutting off any sound on your end of the line while still letting you hear the voice on the other end. The Conf button makes it easy to set up three-way conference calls—much easier than using the conference feature on most PBX phone systems.

The 622 includes two modular jacks, one for each phone line. This is a vast improvement over previous AT&T models that had only one jack on the phone, which made matters quite confusing when trying to connect other equipment, such as a modem, fax, or answering machine.

All in all, the 622 is a fine product. It is gratifying that AT&T, which has made good consumer and corporate phones for a long time, has finally produced a fine phone especially suited to the home office.

CIRCLE READER SERVICE 104 —NICK SULLIVAN





*"I learned word processing, but new software is like starting over."*

## Discover the DeskMate™ Difference... the Friendly Face in the PC crowd.™

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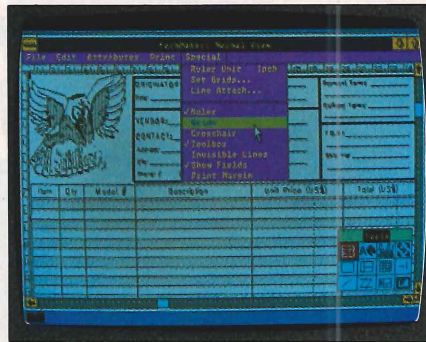
# Keep Your Business in Perfect Form

## Plus: Software to Maximize Sales, a Paint-and-Draw Program, And More

Our reviews of application software use shorthand to describe several of the details associated with any package. This is particularly true under "System Requirements"—where the minimum system configuration is noted—so we have provided the following table of computers for you to refer to as needed. Hardware, software, and memory are required unless noted as "recommended" or "optional." When more than one computer is listed under "System Requirements," the machine marked with an asterisk (\*) is the type on which the software was reviewed. Requirements are *not* listed where obvious (for instance, printers with word processors or modems with communications programs). Operating system requirements, such as MS-DOS or the Macintosh System file, are listed only when they're not the standard, minimum requirement (DOS 2.0 for IBM PC or compatibles, System 3.2 for the Macintosh, or ProDOS for the Apple II). For those computer systems that can use both 5.25- and 3.5-inch disks (IBM PC and PS/2 or the Apple II), we've listed only those disk sizes that are either supplied with the software or available at no extra cost from the publisher. Since most productivity software is not copy protected, we have indicated—with the letters "CP"—only those programs that are copy protected. The version listed is the version reviewed; publishers may release subsequent versions at any time.

Designation	Models
128K Apple	Ile/IIfc/IIGS (in Ile/c mode) and compatibles
128Ke Apple	Ile (enhanced ROM)/IIfc/IIGS(in Ile/c mode)
Apple IIGS	IIGS only
IBM PC, PS/2	PC/XT/AT, PS/2 and compatibles
128K Macintosh	128K/512K/512Ke/Plus/SE/II
512K Macintosh	512K/512Ke/Plus/SE/II
512Ke Macintosh	512Ke/Plus/SE/II
1MB Macintosh	Plus/SE/II

**Ratings Key:** ○ Poor; ★ Average; ★★ Good; ★★★ Very good; ★★★★★ Excellent.



Horizon's toolbox provides features that are indispensable for creating forms.

## Effortless Forms At a Fair Price

### Horizon

VERSION REVIEWED: 1.1

SYSTEM REQUIREMENTS: 640K IBM PC, PS/2; hard-disk drive; EGA, VGA, Hercules; mouse optional; DOS 2.1 or higher; 5.25- or 3.5-inch

PUBLISHER: FormMaker Software, Inc., 57 S. Schillinger Rd., Mobile, AL 36608; (205) 633-3676, (800) 888-8423

PRICE: \$195

OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★

ERROR HANDLING: ★ ★ ★ ★

EASE OF USE: ★ ★ ★

SUPPORT: ★ ★ ★ ★

Most businesses use forms to keep track of everything from employee records to expenses. Many business owners pay top dollar for these forms, but you don't have to. Today, a wide range of software lets you design and produce professional-quality forms at a fraction of the price of purchasing preprinted ones. Although it's a time-consuming process, if your business employs several forms, you may find making your own a worthwhile venture. And if you do decide to give form-making a try, take a look at *Horizon*.

As a forms designer, *Horizon* is a far cry from its older brother, the difficult-to-use and overpriced *FormMaker II*. Now running under *Windows* (or under the run-time version provided for those who don't own *Windows*), *Horizon*, for the most part, does what a form-designing program should do: It shows forms on-screen exactly as they

will look on paper, and it provides tools that hasten the design process and enable you to easily change what you don't like.

*Horizon's Windows* interface offers pull-down menus, dialog boxes, window resizing, and pseudo multitasking. You can operate it with either a mouse or the keyboard—the mouse is more convenient.

The program's best features are its drawing screen and the toolbox, which has everything you'll need for creating a custom form. Each tool is identifiable by an icon: The Line/Box Selection Tool, for example, looks like a miniature business form with vertical and horizontal lines. The toolbox can also be moved or hidden.

The toolbox gives *Horizon* the feel of a drawing program and provides features, such as automatic grid drawing, that are indispensable for creating forms. Picking the Multiple Lines tool from the toolbox gives you a grid with horizontal and vertical lines spaced according to your specifications. When you print, the grid will appear exactly as it did on-screen.

In addition to drawing lines, boxes, and grids, you can import *Microsoft Paint* (MSP) and *PC Paintbrush* (PCX) images, as well as images from any program that produces Tagged Image Files (TIF). If, after you've laid out a form, you decide that the lines, boxes, or images belong somewhere else on the page, you merely push them around with the editing cursor until you're satisfied. Rulers (which border left and top margins), layout grids, and a cursor cross-hair offer even more control.

*Horizon* provides a page-preview mode in which you can conveniently arrange your overall page layout. You can toggle between this page preview (called a reduced view) and a normal view, where you can check the real-world appearance of typefaces and graphic images. It's fun to see a form take shape as lines and shadings instantly appear. Sample forms—memo, invoice, sales, and others—provided with *Horizon* will help you learn the subtleties of layout.

The program supports several dot-matrix and laser printers. Laser-printed *Horizon* forms look just like forms from a print shop.

Like many other forms programs, such as *JetForm Design* and *FormSet*, *Horizon* lets you create forms and fill them in, either by entering data directly on-screen or by merg-



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- Full multi-company capability
- Maintains account history for up to 100 years
- Provides inquiry into individual accounts on screen or to printer

### ACCOUNTS RECEIVABLE

- Includes preformatted statement or...
- User may design 6 different statement formats
- Retains your current customer numbering system
- Sorts reports by customer number, name, zip code, customer type, salesperson code or biller code
- Instant review of customer's account on screen or to printer
- Prints all accounts receivable reports, collection reports and mailing labels at any time

### INVENTORY

- User defined stock numbers up to 15 characters
- Product descriptions up to 45 characters
- Supports FIFO, LIFO, Standard Cost and Weighted Average methods of inventory valuation
- Prints 12 different inventory reports and worksheets sorted by stock number, vendor account, item description, or product type
- Allows up to 4 decimal places for cost and price

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- ✓ **ACCOUNTS RECEIVABLE**
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- ✓ **INVENTORY**
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- ✓ **PAYROLL**



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- Supports automatic invoicing and payment of regular monthly obligations
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- Prepares vendor reports, master lists, payment records, and reports for up to 5 user designated periods

### PAYROLL

- Provides federal, state and local tax tables which may be easily updated by the user as needed
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- Prints 12 payroll reports
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- Hard disk required.

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ing ASCII files (comma-delimited, fixed-length, or single-field-per-line) exported from other programs. If you select the Courier typeface for the files you wish to merge with your form, the data on the printed form will look as if it had been keyed in on a typewriter.

Much of the manual is written as a tutorial, with every step explained clearly. Sample screen images further reduce the margin of error as you learn the program. This visual approach is also used in a handy reference section that introduces you to all of the menus and associated command screens. The index is adequate.

The company provides free product upgrades within 45 days of purchase and offers unlimited free technical assistance via a toll-free number. Both the operator and technical-support person were helpful and courteous when I called.

*Horizon* makes the work of designing forms about as easy as it can be. And its \$195 price is fair. I liked the program and found it easy to use. Before you buy it, or any form maker, however, examine your needs. If you only need to create an occasional form, check out your word processor, database manager, or spreadsheet—what you need may already be right under your nose.

—HENRY F. BEECHHOLD

## Professional-Quality Forms Design

### PerFORM

VERSION REVIEWED: 2.0

SYSTEM REQUIREMENTS: 640K IBM PC, PS/2; hard-disk drive; CGA, EGA, VGA, MCGA, or Hercules; mouse recommended; DOS 2.1 or higher; 5.25- and 3.5-inch

PUBLISHER: Delrina Technology, Inc., 4454 Genesee St., Buffalo, NY, 14225; (716) 855-3676

PRICE: \$295

OVERALL PERFORMANCE: ★ ★ ★

DOCUMENTATION: ★ ★ ★

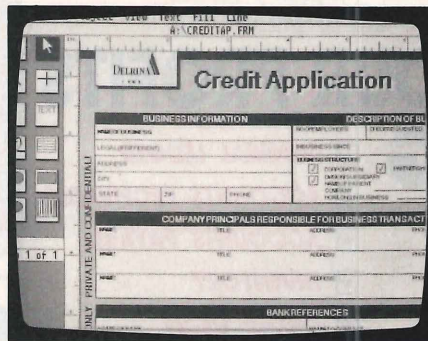
ERROR HANDLING: ★ ★ ★

EASE OF USE: ★ ★ ★

SUPPORT: ★ ★ ★

Customized forms can help you run your company more efficiently. But personalized documents can be prohibitively expensive, and, if you ever need to revise them, chances are you'll be stuck with a pile of expensive scrap paper. *PerFORM*, however, will give you professional-looking forms that you can modify and print out as you need them. You can even fill them in on-screen with the help of automatic calculations and data verification—all at a fraction of the cost of having forms printed professionally.

*PerFORM* runs under the *GEM* environ-



*PerFORM offers professional-quality forms that you can customize to suit your needs.*

ment, and Delrina includes a run-time version of *GEM* with the package. You can also launch the program from Microsoft *Windows*, although it is not a *Windows*-based product. A mouse offers even more control than the keyboard.

*PerFORM* has three modules: Design, for creating customized forms that either can be filled in by hand or on-screen; Print, for producing hard copy of your forms; and Fill, for entering information into the forms on-screen.

Designing a form requires forethought. To get you on the right track, *PerFORM*'s manuals provide a great deal of guidance—from helping you gear the form to its intended users to arranging the areas of the form. It will also help you decide which special effects, typography, and styles (columns, check-mark boxes) to use.

To help you get started, *PerFORM* comes with more than 30 predesigned forms, including such standards as a credit application, an invoice, a to-do list, and shipping labels. These forms can be modified as needed and then customized with logos, graphics, and special effects.

If you already have a form that you'd like to use, such as a fax cover letter, you can use a scanner to scan the document at low resolution and then trace over it on-screen.

Optional rulers across the top and left margins help you size the components of your design; a crosshair (a cursor shaped like a very thin cross) enables you to properly position boxes and columns; and a snap-to grid will align your elements perfectly. You can also divide large boxes into smaller areas with grids and use combs (boxes subdivided into equal-sized horizontal or vertical areas) to create multilined and graph-paper designs.

If you want to display your corporate logo (or any graphic) on your forms, you can import it from whatever drawing program you created it in and then scale it to size. *PerFORM* will accept graphic files in a variety of formats including: Tagged Image File (TIF), *GEM Image* (IMG), *MacPaint* (PNT), *PC Paintbrush+* (PCX), and *GEM*

*Line Art* (GEM).

*PerFORM* has several effects and drawing capabilities, including straight lines of varying widths, boxes (rounded corners are an option), and ovals. These give you flexibility and plenty of opportunity to employ creative design techniques. Unfortunately, creating perfect squares and circles must be done by eye: *PerFORM* does not automatically ensure that the sides of your square are perfectly equal or your circle is uniformly round.

*PerFORM* works with many printers, including products from Epson and Toshiba, HP LaserJets and PostScript printers. The software comes with two built-in typefaces, Swiss (Helvetica) and Dutch (Times Roman). And *PerFORM* will work with Bitstream fonts; however, to use these, you must purchase a \$40 installation kit from Delrina. Using the run-time version of *GEM*, we were not able to access our HP font cartridge.

Designing forms for completion on-screen can be more complex than creating forms to be filled in by hand or typewriter. For example, with electronic forms, you may wish to define formulas for calculations (such as shipping, sales tax, and totals) or set a range of values for data validation (in order to ensure that only certain answers are acceptable). You might also prepare help screens (so that users will have on-line assistance if they become confused during a form's completion process). *PerFORM*'s *dBase* Lookup function allows you to extract information from a *dBase* file and use it as you fill in your forms on screen.

Delrina markets a special fill-in-only package, called *PerFORM Filler*, for \$130. As the name implies, this package only allows users to enter data into and print existing electronic forms.

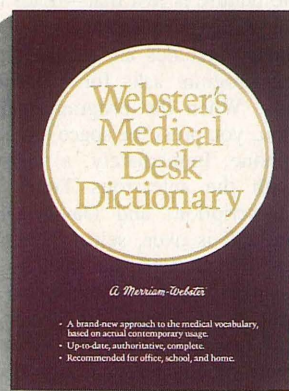
Several manuals come with *PerFORM*. The Interface manual describes the *GEM* Interface and how *PerFORM* works with it. The Designer manual provides tutorials and reference information to help you learn the intricacies of the software. The Filler and Text Filler manuals describe how to use *PerFORM*'s on-screen, electronic form-filling capabilities. Unfortunately, a quick-reference card is not provided, although Delrina recommends that users photocopy the keyboard commands and shortcuts pages from their manual and keep them handy.

Delrina maintains a non-toll-free technical-support line in Buffalo, New York, as well as a fax number in Toronto, Ontario. Users are encouraged to fax their problems and questions so that support personnel can visualize the problem.

We found *PerFORM* powerful and easy to use. And the forms we created looked professional. However, be advised that designing forms is time-consuming—especial-

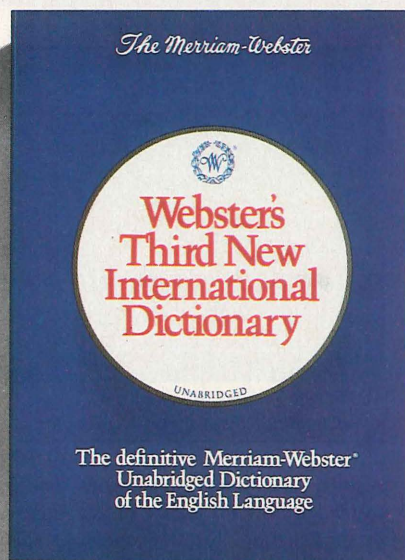


To succeed in business, you need excellent references.



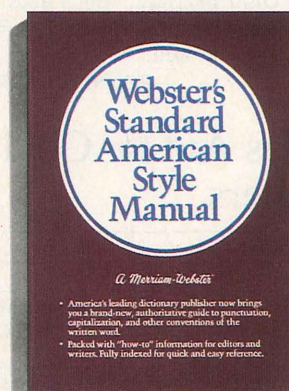
"This new medical dictionary will take its place, within easy reach, on my shelf of reference books."

Lois DeBakey  
Baylor College of Medicine



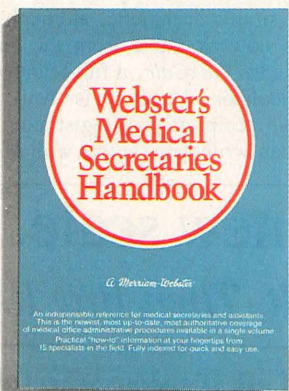
"It's the closest we can get, in America, to the voice of authority."

The New York Times



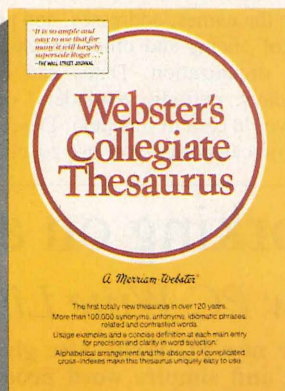
"Useful to the executive, secretary or any other person who must compose memos, reports, letters, newsletters and more."

Office Systems '85



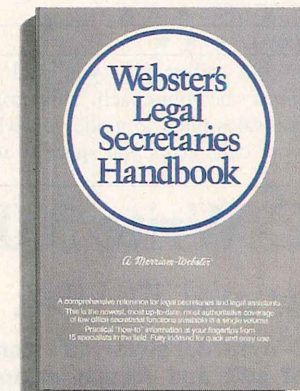
"This is a tightly-packed book of facts for medical secretaries and medical assistants/administrators . . . this one is comprehensive and handy."

Library Journal



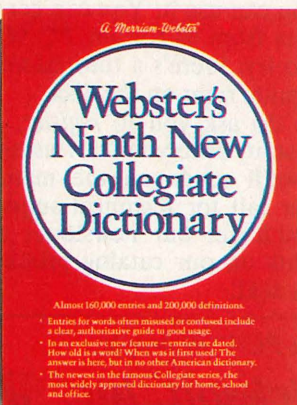
"It is so simple and easy to use that for many it will largely supersede Roget's . . ."

The Wall Street Journal



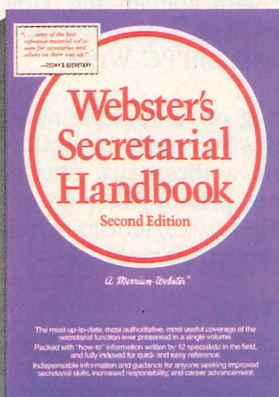
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ly for forms you plan to fill in on-screen—because you need to fine-tune your final product to get it just right. Another problem is the *GEM* interface, which does not operate as smoothly as it should. But *PerFORM* will serve you well.

—RONNI & HARRY GEIST

## Sales Aid for Cold Callers

### Maximizer

VERSION REVIEWED: 1.6

SYSTEM REQUIREMENTS: 640K IBM PC, PS/2; hard-disk drive; DOS 2.1 or higher; 5.25- and 3.5-inch

PUBLISHER: Richmond Technologies and Software Inc., Suite 420, 6400 Roberts St., Burnaby, BC V5G 4C9 Canada; (604) 299-2121

PRICE: \$195

OVERALL PERFORMANCE: ★ ★ ★

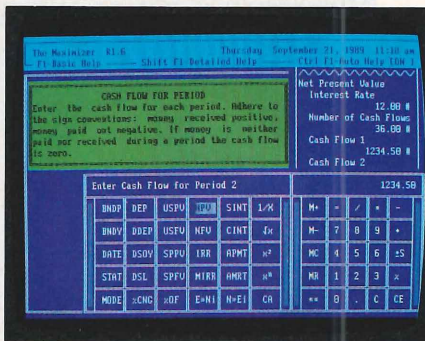
DOCUMENTATION: ★ ★

ERROR HANDLING: ★ ★ ★

EASE OF USE: ★ ★ ★

SUPPORT: ★ ★ ★

Does cold calling give you cold feet? Let *Maximizer* be your coach. This program displays a sales pitch to guide you while making your call, gives you space to record the



Maximizer's individual client files cover contacts, dates, descriptions, and notes.

results, and even helps you send out a canned follow-up letter. In addition, *Maximizer* generates form letters, logs calls and correspondence, tracks personal expenses, and assists you with financial analysis.

*Maximizer* revolves around data files—one for each client. These files, which are invoked by pop-up menus, cover contacts, dates, descriptions, and notes. Contacts include the names, addresses, and phone numbers of clients and other people in the client's organization. Dates can be lists of birthdays, periodic reminders, or anything else you'd care to schedule. Descriptions are lists of categories you use to classify your

clients. This could include a category for clients who use several suppliers, for example, or for those who get a special discount. The Note feature is just that—notes about a client you write to yourself.

*Maximizer* includes an autodialing function. The program asks for a description, then dials. When the program makes the connection, you press the space bar and pick up the phone. Immediately, a window appears with the selections Time, Notes, Diary, Description, and Day-at-a-Glance. When the call is over, select Time to stop the timer, which starts automatically when you press the space bar—*Maximizer* records the length of the call. When you select Diary, the program enters the name of the person you called and your description of the call. Notes lets you review your sales spiel during the call.

The software includes facilities for making common financial calculations (even while you're on the phone) like amortized payments, payment schedules, and outstanding balances. Oddly, there's no provision for simple arithmetic, although an upgrade is now available from the company that includes *MaxCalc*, a full-featured business calculator. *MaxCalc* is available for \$24 upon receipt of your registration card.

You can write form letters with *Maximiz-*

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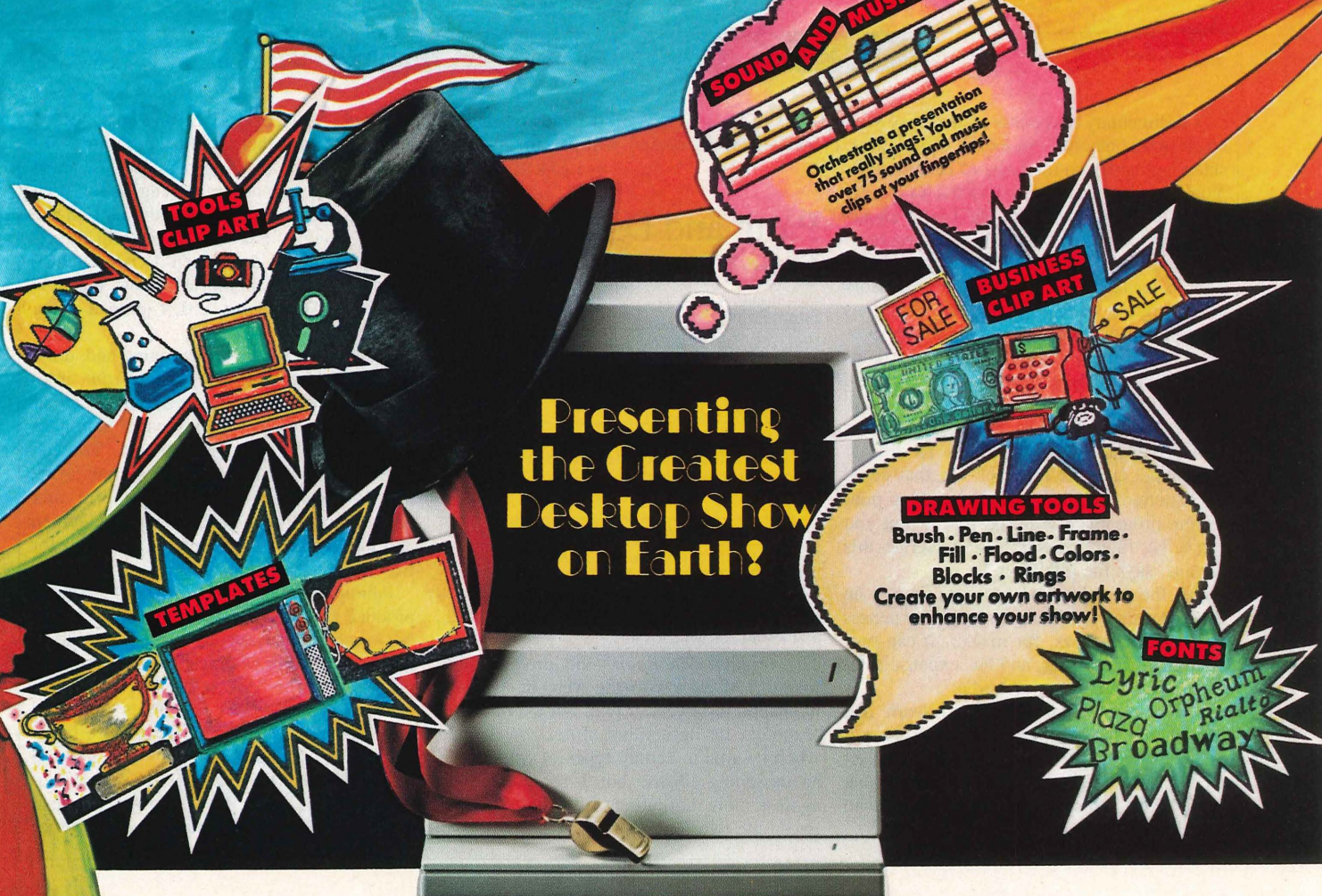
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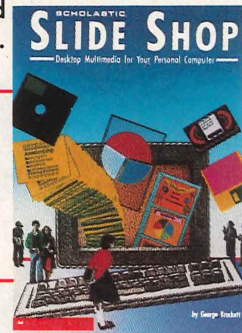
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er's rudimentary text editor. You'll use your client and contact file to merge form letters, selecting names on the basis of descriptions. You can also generate individual follow-up letters to people you just called or to clients who are having anniversaries or birthdays. *Maximizer's* form-letter generator, however, is weak. In the age of word processors that integrate desktop-publishing functions as standard features, *Maximizer* only provides generic typewriter output—no bold-face, italics, or letterheads. All you can do is set the margins; you can't even vary spacing between the address and the body. This printed-ASCII approach would be fine if you could save the text to a file that could be exported to your favorite desktop-publishing program or word processor, but you can't. (A future version will integrate this feature, says the publisher.)

For the traveling salesperson, there's an account file for totaling monthly expenses (and daily expenses, for meals). It can produce totals, subtotals, and has expense categories you can add to and edit.

*Maximizer*, although easy to learn and use, would have benefited from a tutorial, either on-screen or written. But the support technician I spoke to was knowledgeable and helpful, although the publisher has no toll-free number.

So, if your livelihood depends on dialing for dollars, *Maximizer* will pay for itself.

— LAMONT WOOD

## Paint and Draw with One Versatile Package

### SuperPaint

VERSION REVIEWED: 2.0

SYSTEM REQUIREMENTS: 1MB Macintosh; two drives (hard-disk drive recommended); System 6.0.2 or higher

PUBLISHER: Silicon Beach Software, P.O. Box 261430, 9770 Carroll Center Rd., San Diego, CA 92126; (619) 695-6956

PRICE: \$199

OVERALL PERFORMANCE: ★ ★ ★ ★

DOCUMENTATION: ★ ★ ★ ★

ERROR HANDLING: ★ ★ ★ ★

EASE OF USE: ★ ★ ★ ★

SUPPORT: ★ ★ ★ ★

The original *MacPaint*—the program that first turned me on to the Macintosh—kept me happy for a year or two, but then I began to notice its limitations. *MacDraw* helped when it came to certain types of work, such as designing forms, but I soon came up against more limitations as I switched between the two programs.

When I discovered *SuperPaint* 1.1, I abandoned my other graphics programs. *SuperPaint* is one of the programs I use most often. I used it to design packaging for three products, several magazine ads, and all the art and layout for a very successful direct-mail campaign. So, when HOME-OFFICE COMPUTING asked me to review the new version of *SuperPaint*, 2.0, I jumped at the chance.

Picking up where other paint and draw programs have left off, *SuperPaint* integrates painting and drawing in a way that mimics the layers of tracing paper architects often use when designing a model. You can superimpose a paint layer over a draw layer, or vice versa, which allows you to mix painted and drawn images, both on-screen and in hard copy—eliminating the need for two separate programs.

Painting and drawing on the Macintosh produce different types of images. Painted (also called bit-mapped) images are interpreted as patterns of pixels, or little dots, on the screen. The Mac interprets drawn images as whole shapes. Printouts produced from the paint layer of *SuperPaint* are limited to the screen resolution and have a rough, textured look compared to those produced in the draw layer, which you can print at a higher resolution for a sharper

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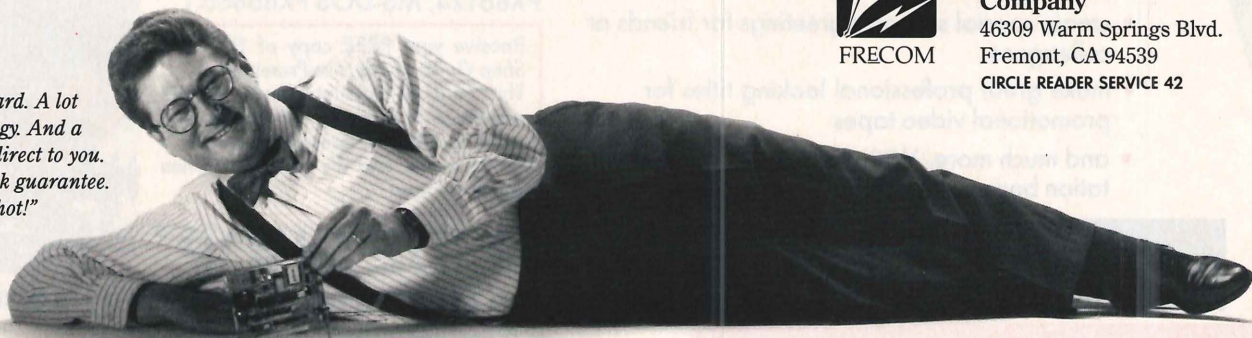
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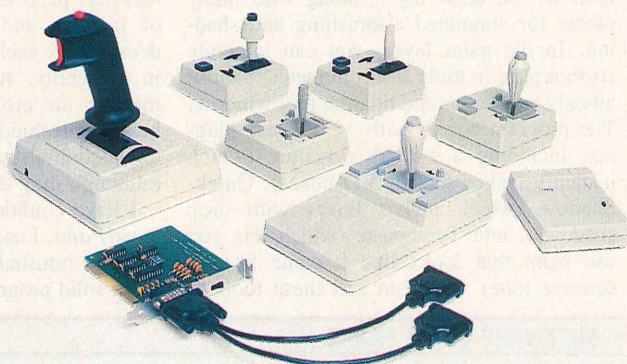
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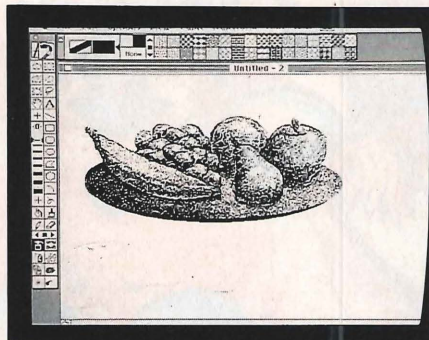
appearance.

The *SuperPaint* screen looks much like a screen found in other Macintosh programs. There are pull-down menus across the top of the screen and floating windows, which can be moved anywhere on the screen (or eliminated entirely). Windows offer you a convenient way to switch between documents. Flipping from the paint layer to the draw layer requires only a click of the mouse. Document size is limited only by your computer's available RAM.

I found it especially useful to be able to have up to four paintings on-screen at a time and switch from one to another. This makes it a breeze to copy and paste sections of one painting onto another.

*SuperPaint* has everything that *MacPaint* and *MacDraw* have, plus so much more that I couldn't mention it all without writing a book. You can quickly stretch, flip, rotate, slant, scale, and add perspective to images in both the paint and draw layers. This makes for some very exciting (and easy to create) works of art. I found the drawing tools most useful for creating lines, text, and shapes that have defined borders and fill patterns. The Freehand Bezier tool automatically smooths out lines and curves as you draw them—no more bumpy curves.

The paint layer includes some of the same tools as the draw layer, along with many others for simulated airbrushing and shading. In the paint layer, you can integrate custom plug-in tools and commands to those already existing in the floating tool window. The program comes with 34 of these plug-ins, including a 3-D Box feature (which instantly makes shaded 3-D boxes), QuickShadow (which makes boxes with drop shadows), and Toothpaste (which lets you use paint that looks like it came from a squeeze tube). You can add these tools to



*The ability to mix painted and drawn images is what makes SuperPaint uniquely versatile. In business, that kind of flexibility counts.*

your menus as you see fit; there is no limit to how many you can install at one time.

I used *SuperPaint* to lay out an insert card for an audiocassette case. I positioned all the borderlines and text in the draw layer, then grouped them together as one movable object. Switching to the paint layer, I created a bit-mapped picture of a mountain scene and superimposed it over the card template. When everything lined up, I converted the picture into a draw-layer image so I could take advantage of the draw layer's greater print resolution. I then combined the two images to create the final product.

The *SuperPaint* documentation includes a 400-plus-page manual, which is chock full of pictures and screen shots that clearly demonstrate each feature. The text is written in a friendly, step-by-step style that eased me into the program's functions without a bunch of technical mumbo jumbo. The documentation also includes keyboard shortcuts (although they are also listed on-screen).

I have confidence in the new version of *SuperPaint*. I used it for several weeks without any unusual errors or deadly crashes. It's a solid program that has what it takes to

perform under a heavy workload. Once in a while I hit a wrong key while taking a shortcut, but was always able to recover quickly without ending up in computer never-never land.

Although extremely powerful, *SuperPaint* is still easy enough for my five-year-old daughter to sit down and explore without constantly yelling for Daddy. For more advanced applications, however, *SuperPaint* also incorporates many subtle levels of operation that require leafing through the manual and some experimentation.

I called the Silicon Beach support line when I discovered a problem printing rotated text. Getting right through to a friendly and knowledgeable support person, I relayed my problem. He told me that QuickDraw printers, such as the ImageWriter II, have a problem dealing with rotated text. Giving me what he called a "work-around," he told me how to transfer the text to the paint layer at twice the size, then shrink it back down and place it in the draw layer once again. True to his promise, the text came out looking great on the next printout. In addition, he sent me a detailed explanation of how QuickDraw printers function.

*SuperPaint* is one of the first programs I show people when they want to see my Macintosh in action. When it comes to graphic design, *SuperPaint* is an invaluable tool in my home office, and I expect that it will be some time before a program comes along to take its place. After using both versions of *SuperPaint* for more than a year, I'm still discovering things that it can do and I'm clearing my shelf of other programs that it renders obsolete. I highly recommend it for getting down to serious work or just for fun.

—JOEY LATIMER

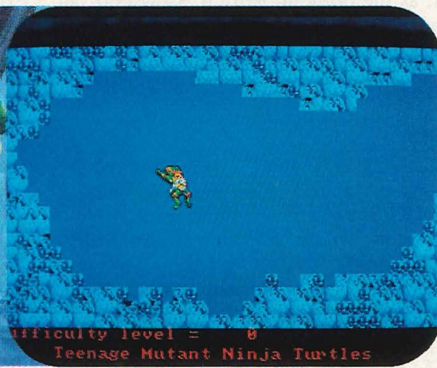
## SOFTWARE QUICK TAKES

TITLE/PUBLISHER PRICE/VERSION	SUMMARY	SYSTEM REQUIREMENTS	RATINGS O D EH EU S
<b>Memory Lane</b> Group L Corporation 481 Carlisle Dr. Herndon, VA 22070 (703) 471-0030 \$99 v2.0	Memory-resident program that lets you index and search your disk for lost files or text. Flaws, such as incompatibility with disk-caching software, graphics programs, and expanded memory managers make <i>Memory Lane</i> only marginal. Includes many useful search commands, such as a function for proximity searching, which lets you specify how close two words should be to each other to meet the search criteria. However, <i>Memory Lane</i> may produce as many headaches as it solves. —Lamont Wood	256K IBM PC, PS/2. Hard-disk drive. 5.25- or 3.5-inch	★ ★ ○ ★ ★
<b>Name Tag Kit</b> Power Up! Software Corp. 2929 Campus Dr. San Mateo, CA 94403 (415) 345-5900 \$100 (\$80 for software only) vA.00	This innovative package gives you all the equipment you need to print out and assemble 100 name tags without a hitch. (It even includes the card-stock tags and plastic holders.) <i>Name Tag Kit</i> lets you import name data in delimited ASCII or word-processing format from your database or address-book program. Size, typeface, and justification are left to you. Good value. —Joey Latimer	384K IBM PC, PS/2. Hard-disk drive. 5.25- or 3.5-inch	★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

**Ratings Key:** O Overall Performance; D Documentation; EH Error Handling; EU Ease of Use; S Support; ○ Poor; ★ Average; ★★ Good; ★★★ Very Good; ★★★★ Excellent



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## Learning And Leisure

### Microzine Jr., No. 1

**SYSTEM REQUIREMENTS:** 64K Apple

**PUBLISHER:** Scholastic Inc., 730 Broadway, New York, NY 10003; (212) 505-3000

**PRICE:** \$33

**SUGGESTED AGES:** 6-9

**COPY PROTECTED:** Yes

**OVERALL PERFORMANCE:** ★ ★ ★

**DOCUMENTATION:** ★ ★ ★

**ERROR HANDLING:** ★ ★ ★ ★

**GRAPHICS QUALITY:** ★ ★ ★

**EASE OF USE:** ★ ★ ★ ★

Scholastic's *Microzine Jr.* is the child of *Microzine*, the classic magazine on disk that has been popular with children ages 10 and up over the years. Bearing a strong family resemblance, *Microzine Jr.* is aimed at a younger age group (six to nine), and it delivers exceptional quality and quantity at a good price.

*Microzine Jr.* is an educational magazine on disk for youngsters, complete with regular departments, such as Letters and Computer Stuff, and special features. Included on two double-sided disks, Computer Stuff allows even very young users to initialize blank disks and copy files. The premier issue also includes four special programs, each based on a specific learning skill.

My son, Jonathan, likes Eye Spy best. The picture puzzle presents a farmhouse scene with many silly errors, which Jonathan enjoyed spotting and correcting. Also included are the adventure Where is Piggy?, which challenges your child's decision-making and deductive-reasoning skills; the Video Garden, which teaches about plants and their growing cycles; and Storybook Maker, a reading activity.

*Microzine Jr., No. 1*, is educationally sound, fun to use, and engrossing for younger children. —JUDITH ZORNBERG

### Jumbled Jungle

**SYSTEM REQUIREMENTS:** 128K Apple; 5.25- or 3.5-inch disks

**PUBLISHER:** Learning Lab Software, 21000 Nordhoff St., Chatsworth, CA 91311; (818) 341-9611

**PRICE:** \$40

**SUGGESTED AGES:** 6-9

**COPY PROTECTED:** Yes

**OVERALL RATING:** ★ ★

**DOCUMENTATION:** ★ ★

**ERROR HANDLING:** ★ ★

**GRAPHICS QUALITY:** ★ ★

**EASE OF USE:** ★ ★

*Jumbled Jungle* is a graphics and writing program that asks six- to nine-year-olds to make up animal characters by assembling body parts and then write a story describing their creations. Designed to build language skills by encouraging youngsters to read and write, *Jumbled Jungle* allows children to interchange animal heads, bodies, and legs to create fanciful figures. When a picture looks just right, kids simply press Return to enter the word-processing mode, where they write and edit original stories (up to five pages long) about their creatures.

Learning Lab's creative-writing application is well conceived, but the title may confuse youngsters. Although the program includes 21 predrawn animals and accurate descriptions of each of them, they aren't all jungle creatures. Several of the animals (such as the dolphin, ostrich, kangaroo, antelope, and giraffe) do not reside in the jungle. —CAROL S. HOLZBERG

### SimCity

**SYSTEM REQUIREMENTS:** 512Ke Macintosh\*. ImageWriter optional. Also for 512K Amiga, C 64, 512K IBM PC, PS/2 with CGA or Hercules (640K with EGA); 5.25- and 3.5-inch (IBM). *SimCity Supreme* for color Mac II

**PUBLISHER:** Maxis Software, 1042 Country Club Dr., Suite C, Moraga, CA 94556; (415) 376-6434

**PRICE:** \$30-\$80

**COPY PROTECTED:** YES

**OVERALL PERFORMANCE:** ★ ★ ★ ★

**DOCUMENTATION:** ★ ★ ★ ★

**PLAY SYSTEM:** ★ ★ ★ ★

**GRAPHICS QUALITY:** ★ ★ ★ ★

**EASE OF USE:** ★ ★ ★ ★

Welcome to *SimCity*, one of the most interestingly conceived and executed, perfect-for-the-whole-family pieces of software ever. This program is wholesome, visually delightful, and extremely easy to use; yet it's sophisticated in appearance and concept.

Your primary goal in *SimCity* is to spend decades building the city of your dreams, whether it's a soaring metropolis of skyscrapers, or a pastoral cluster of small communities linked by high-tech railroads. The inhabitants of the city—the Sims—will tell you themselves how well you're doing. They vote with their feet, moving into or out of your city.

Your primary role is planning: The Sims will do the actual building as you sit back and watch. For example, you zone a region for commercial use, but it's up to the Sims and the dynamics of urban development whether or not it becomes a gleaming downtown shopping district or a seedy strip mall. You'll see whatever happens right before your eyes, with minutely detailed, intricately animated, and downright fascinating

graphics. Plan wrong—or get hit by a tornado or other disaster—and your city may become a destitute backwater. Fortunately, you can always start again.

I couldn't find anything to dislike about *SimCity*. It's the kind of product that you may find hard to put out of your mind. At least, you may find yourself thinking about how your own town is run and saying, "Gee, I could run this place better. . . ." So get a hold of *SimCity*, and go to town.

—ROBERT GEHORSAM

### The Duel: Test Drive II

**SYSTEM REQUIREMENTS:** Reviewed on 384K IBM PC, PS/2; CGA, EGA, VGA; 5.25 or 3.5-inch. Also for 512K Amiga, 512K Apple IIGS, C 64, 512K Macintosh

**PUBLISHER:** Accolade, 550 S. Winchester Blvd., Suite 200, San Jose, CA 95128; (408) 296-8400

**PRICE:** \$30-\$50

**COPY PROTECTED:** No

**OVERALL:** ★ ★ ★ ★

**DOCUMENTATION:** ★ ★ ★

**PLAY SYSTEM:** ★ ★ ★ ★

**GRAPHICS QUALITY:** ★ ★ ★ ★

**EASE OF USE:** ★ ★ ★ ★

All you armchair Mario Andretti out there, here comes *The Duel: Test Drive II*. *The Duel* is a worthy update to its excellent predecessor, *Test Drive*. You race the fastest, most expensive cars in the world at dangerous speeds on our nation's highways.

How would you like to drive a car that costs more than your first home? The game will accommodate you with the Porsche 959 (this one lists for \$230,000). The Ferrari F40 costs a mere \$240,000 and has a top speed of 201 miles per hour. And who cares if you wrap it around a tree?

*The Duel* is easy to set up and play and has terrific graphics. You can race against the clock or against a computer car. You set your own skill level, from Automatic Shift to Macho Man Pro.

A word of advice. Get a good joystick for this game. Using the keyboard or a loose joystick will show you what it is like to do 150 while intoxicated (not recommended).

Having only two cars on the game disk is grossly insufficient. It practically forces you to buy one of the expansion disks: *The Supercars* or *The Muscle Cars* (\$15-\$20 each). It's not a bad investment, but Accolade should have included more cars on the master disk. (Choosing cars is half the fun.)

All in all, however, *The Duel* is dandy. It caters to the speed demon lurking in all of us. Who knows? Maybe it will get you to take your kids out of those expensive private schools and make a down payment on a Ferrari F40.

—AARON ROSTON ■





These best-seller lists, prepared exclusively for HOME-OFFICE COMPUTING by Egghead Discount Software, are based on September sales at 204 Egghead stores in the United States and Canada.

IBM	BUSINESS	HOME/SMALL BUSINESS	EDUCATION	ENTERTAINMENT	IBM
	<ol style="list-style-type: none"> <li>1. WordPerfect v4.2 and v5.0 <i>WordPerfect Corp.</i></li> <li>2. Lotus 1-2-3 <i>Lotus Development Corp.</i></li> <li>3. PFS: First Publisher <i>Software Publishing Corp.</i></li> <li>4. Works v1.05 <i>Microsoft Corp.</i></li> <li>5. Word v5.0 <i>Microsoft Corp.</i></li> <li>6. Windows/286 <i>Microsoft Corp.</i></li> <li>7. First Choice v3.0 <i>Software Publishing Corp.</i></li> <li>8. SpinRite <i>Gibson Research</i></li> <li>9. RightWriter v3.1 <i>RightSoft, Inc.</i></li> <li>10. Excel v2.1 <i>Microsoft Corp.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. The Print Shop w/Graphics Library <i>Broderbund Software</i></li> <li>2. Calendar Creator Plus <i>Power Up! Software</i></li> <li>3. PC Paintbrush <i>ZSoft/Mediagenic</i></li> <li>4. Résumé Kit <i>Spinnaker Software</i></li> <li>5. Managing Your Money v5.0 <i>MECA</i></li> <li>6. Will Maker v3.0 <i>Nolo Press</i></li> <li>7. PrintMaster Plus <i>Unison World</i></li> <li>8. PC Globe + <i>Cornwell Systems, Inc</i></li> <li>9. Print Magic <i>Epyx, Inc.</i></li> <li>10. Family Reunion <i>FAMWare</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Learning DOS v2.0 <i>Microsoft Corp.</i></li> <li>2. Mavis Beacon Teaches Typing <i>The Software Toolworks/EA</i></li> <li>3. Math Blaster Plus <i>Davidson &amp; Associates</i></li> <li>4. Where in the USA . . . ? <i>Broderbund Software</i></li> <li>5. Where in Time <i>Broderbund Software</i></li> <li>6. Where in the World . . . ? <i>Broderbund Software</i></li> <li>7. Reader Rabbit <i>The Learning Company</i></li> <li>8. Mixed-Up Mother Goose <i>Sierra On-Line</i></li> <li>9. Typing Tutor IV <i>Simon &amp; Schuster</i></li> <li>10. Children's Writing &amp; Publishing Center <i>The Learning Company</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Flight Simulator v3.0 <i>Microsoft Corp.</i></li> <li>2. F-15 Strike Eagle II <i>Microprose</i></li> <li>3. 688 Attack Sub <i>Electronic Arts</i></li> <li>4. The Duel: Test Drive II <i>Accolade</i></li> <li>5. Space Quest III <i>Sierra On-Line</i></li> <li>6. The Chessmaster 2100 <i>The Software Toolworks/EA</i></li> <li>7. Franchise Football League <i>SpaceTech Enterprises</i></li> <li>8. Indiana Jones and the Last Crusade: The Graphic Adventure <i>LucasFilm Games/EA</i></li> <li>9. Leisure Suit Larry <i>Sierra On-Line</i></li> <li>10. Leisure Suit Larry II <i>Sierra On-Line</i></li> </ol>	
MACINTOSH	BUSINESS	HOME/SMALL BUSINESS	EDUCATION	ENTERTAINMENT	MACINTOSH
	<ol style="list-style-type: none"> <li>1. MyMailList <i>MYSSoftware</i></li> <li>2. Word v4.0 <i>Microsoft Corp.</i></li> <li>3. PageMaker v3.0 <i>Aldus Corp.</i></li> <li>4. Excel v2.2 <i>Microsoft Corp.</i></li> <li>5. Works v2.0 <i>Microsoft Corp.</i></li> <li>6. WordFinder <i>Microlytics</i></li> <li>7. WriteNow v2.0 <i>T/Maker Company</i></li> <li>8. SuperCard <i>Silicon Beach Software</i></li> <li>9. atOnce! v1.0 <i>Layered, Inc.</i></li> <li>10. MacWrite II <i>Clarix Corp.</i></li> </ol>	<ol style="list-style-type: none"> <li>1. The Print Shop <i>Broderbund</i></li> <li>2. Calendar Creator v1.0 <i>Power Up! Software</i></li> <li>3. World Class Fonts <i>Double-Click Software</i></li> <li>4. Managing Your Money <i>MECA</i></li> <li>5. Dinner at Eight <i>Rubicon Publishing</i></li> <li>6. Will Maker v3.0 <i>Nolo Press</i></li> <li>7. Wet Paint Vol. 1 &amp; 2 Bundle <i>Double-Click Software</i></li> <li>8. Family Matters <i>Springboard Software</i></li> <li>9. PosterMaker Plus <i>Broderbund Software</i></li> <li>10. Images with Impact! Business I <i>3G Graphics</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Mavis Beacon Teaches Typing <i>The Software Toolworks</i></li> <li>2. Where in the World . . . ? <i>Broderbund Software</i></li> <li>3. Where in the USA . . . ? <i>Broderbund Software</i></li> <li>4. Manhole <i>Mediagenic</i></li> <li>5. Number Maze <i>Great Wave Software</i></li> <li>6. Math Blaster <i>Davidson &amp; Associates</i></li> <li>7. Reader Rabbit <i>The Learning Company</i></li> <li>8. Type! <i>Broderbund Software</i></li> <li>9. Typing Instructor Encore <i>Individual Software, Inc.</i></li> <li>10. KidsTime <i>Great Wave Software</i></li> </ol>	<ol style="list-style-type: none"> <li>1. SimCity <i>Maxis Software/Broderbund</i></li> <li>2. Falcon v2.0 <i>Spectrum-HoloByte</i></li> <li>3. Sargon IV <i>Spinnaker Software</i></li> <li>4. Leisure Suit Larry <i>Sierra On-Line</i></li> <li>5. Flight Simulator v1.02 <i>Microsoft Corp.</i></li> <li>6. Beyond Dark Castle <i>Silicon Beach Software</i></li> <li>7. Crystal Quest v2.2 <i>Casady &amp; Greene, Inc.</i></li> <li>8. The Puzzle Gallery <i>Electronic Arts</i></li> <li>9. Tetris <i>Spectrum HoloByte</i></li> <li>10. Life &amp; Death <i>The Software Toolworks/EA</i></li> </ol>	
APPLE	BUSINESS	HOME/SMALL BUSINESS	EDUCATION	ENTERTAINMENT	APPLE
	<ol style="list-style-type: none"> <li>1. WordPerfect v1.1 <i>WordPerfect Corp.</i></li> <li>2. WordPerfect v2.1 <i>WordPerfect Corp.</i></li> <li>3. Publish-It v2.0 <i>Timeworks, Inc.</i></li> <li>4. List &amp; Mail <i>Avery</i></li> <li>5. Wordbench <i>Addison-Wesley Publishing</i></li> <li>6. GEOPublish <i>Berkeley Software</i></li> <li>7. Graph-It! <i>Timeworks, Inc.</i></li> <li>8. AppleWorks GS <i>Clarix Corp.</i></li> <li>9. AppleWorks v2.1 <i>Clarix Corp.</i></li> <li>10. Notes 'n' Files <i>DataPak Software</i></li> </ol>	<ol style="list-style-type: none"> <li>1. The Print Shop w/Graphics Library <i>Broderbund Software</i></li> <li>2. Bank Street Writer Plus <i>Broderbund Software</i></li> <li>3. Print Magic <i>Epyx, Inc.</i></li> <li>4. The Print Shop Party Graphics <i>Broderbund Software</i></li> <li>5. The Print Shop Companion <i>Broderbund Software</i></li> <li>6. Family Matters <i>Springboard Software</i></li> <li>7. GEOFile <i>Berkeley Software</i></li> <li>8. Deluxe Write/Deluxe Paint II <i>Electronic Arts</i></li> <li>9. The Print Shop Holiday Graphics <i>Broderbund Software</i></li> <li>10. Managing Your Money v4.0 <i>MECA</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Math Blaster Plus <i>Davidson &amp; Associates</i></li> <li>2. Where in the World . . . ? <i>Broderbund Software</i></li> <li>3. Mavis Beacon Teaches Typing <i>The Software Toolworks/EA</i></li> <li>4. Children's Writing &amp; Publishing Center <i>The Learning Company</i></li> <li>5. Think Quick! <i>The Learning Company</i></li> <li>6. Where in the USA . . . ? <i>Broderbund Software</i></li> <li>7. Mixed Up Mother Goose <i>Sierra On-Line</i></li> <li>8. Reader Rabbit <i>The Learning Company</i></li> <li>9. Magic Spells <i>The Learning Company</i></li> <li>10. Math Blaster Mystery <i>Davidson &amp; Associates</i></li> </ol>	<ol style="list-style-type: none"> <li>1. The Duel: Test Drive II <i>Accolade</i></li> <li>2. Hardball <i>Accolade</i></li> <li>3. The Last Ninja <i>Mediagenic</i></li> <li>4. TV Game Shows: Jeopardy/ Wheel of Fortune <i>ShareData</i></li> <li>5. King's Quest IV <i>Sierra On-Line</i></li> <li>6. Chuck Yeager's Advanced Flight Trainer <i>Electronic Arts</i></li> <li>7. Wings of Fury <i>Broderbund Software</i></li> <li>8. Silpheed <i>Sierra On-Line</i></li> <li>9. Chessmaster 2100 <i>The Software Toolworks/EA</i></li> <li>10. Choplifter! and David's Midnight Magic <i>Broderbund Software</i></li> </ol>	



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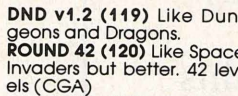
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## GAMES

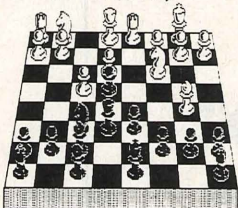
**STARLORD (GAM95)** Play Star Trek on your PC (CGA)  
**STRIKER (110)** "Top Gun" in space (CGA)  
**DRACULA IN LONDON (GAM 94)** Great graphics game based on novel (CGA)



**DND v1.2 (119)** Like Dungeons and Dragons.  
**ROUND 42 (120)** Like Space Invaders but better. 42 levels (CGA)  
**BRIDGEPAL (171)** Complete game of contract or rubber bridge, with tutorial.  
**TWO BIT POKER v2.0 (172)** Our best draw poker. Nice graphics (CGA)  
**SPACEWAR (158)** Dogfight in outer space using phasers, photon torpedoes, etc.  
**PC-JIGSAW v1.1 (GAM71)** Beautiful computer jigsaw puzzles. Color or mono.  
**EAT 'EM II (GAM 74)** Like Pac Man but with a bigger field.  
**KID-GAMES (GAM8)** Animals math, clock game, alphabet, etc. (CGA)  
**CHES (GAM9)** Incredible. 2D and 3D. Playback moves, store games (CGA)



**EGA RISK (GAM11)** World domination in great color. With EGA Asteroids (EGA)  
**SCRABBLE (GAM72)** Exact rendition of the all time favorite (EGA)  
**CADDIEHACK EGA GOLF (GAM100)** Best 18-hole shareware golf game around! Incredible graphics. CGA version is **GAM101** (EGA)  
**MAH JONGG (GAM103)** High tech simulation of this ancient game. CGA version incl. (VGA)



**BLACKJACK! v1.5 (GAM47)** Very professional and superb graphics (Mono or EGA)  
**PAS TRIVIA v3.02 (GAM114)** Family oriented trivia game for up to 6 players.



**KINGDOM OF KROZ (GAM5)** A combination arcade, adventure, and strategy game with 25 levels.  
**CROSSWORD CREATOR (GAM 108)** Shareware's finest crossword puzzle generator!  
**SHARP SHOOTER (GAM84)** Tank vs. tank warfare game. Up to eight players (CGA)

## PROGRAMMING

**PC-BASIC PRIMER (1625)** Learn BASIC in a very colorful environment (CGA, BASIC).  
**PERSONAL C COMPILER v1.2 (1627)** Small C compiler. Great for learning the C language (2 FD or HD)

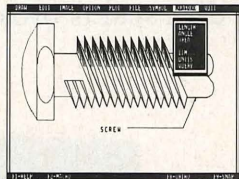
## WORD PROCESSING

**PC-WRITE v3.02 (434-436/3 disks)** Newest version! Very popular. Includes spelling checker (2 FD or HD)  
**GALAXY v2.42 (407)** Easy to use menu system. Mouse and EGA support.  
**PC-WRITE MACROS v1.2 (458)** 100 special commands for PC-Write.

## GRAPHICS

**MIND CHART (GRA37-GRA38/2 disks)** Menu-oriented screen graphics charting and drawing programs.

**SIMCGA/HGCIBM (1027, 1062/2 disks)** Use with Hercules graphics card/compatible to run CGA programs on your monochrome.  
**IMAGE-3D (1048)** Create, edit 3-D objects. Move, scale, rotate image (CGA).  
**FINGER PAINT v2.00 (1050)** Use keyboard or mouse to draw. Like MacPAINT (CGA)  
**DRAFT CHOICE (GRA6)** Excellent menu-driven CAD program. Mouse support.



**CHARTS UNLIMITED (GRA16)** Complete system for flow charts, organizational, electrical, etc., with symbols.

## SPREADSHEETS

**AS-EASY-AS (505)** Great! Includes screen help menus. A Lotus clone that reads Lotus files.  
**PC-CALC v1.0 (512-514/3 disks)** Jim Button's famous Lotus clone (2 FD or HD)  
**PIVOT v1.01 (516)** Prints Lotus or As-Easy-As worksheets sideways.

## MUSIC

**COMPOSER (313)** Create, edit and play music with nice graphics. (CGA)  
**CHRISTMAS SONGS (311)** Collection of your favorite Christmas tunes.

## UTILITIES

**PROFESSIONAL MASTERKEY v3.0 (2805)** Like Norton's. Retrieve deleted files. A lifesaver (2 FD or HD)  
**TECHSTAFF TOOLS (3068-3069/2 disks)** 13 utilities no computer should be without!  
**SCOUT v3.5 (2808)** Excellent file/directory control program (for EM memory order #2809)  
**SCREENSAVER v1.05 (UTL21)** Save monitor from burn-in. For all video displays.  
**BRADFORD v2.0 (2729)** Beautiful fonts for your dot matrix.  
**PAS MASTER MENU v1.02 (UTL33)** PC menu interface for multiple users passwords, etc. (HD)

## DOS

**TUTOR.COM v4.4 (1301)** Teaches you DOS. Interactive.  
**HELPDOS v2.0 (1326)** On-line DOS help with menus. Includes DOS dictionary of terms and a hints menu.  
**STILL RIVER SHELL v2.58 (1304)** Run DOS commands from menu. Make DOS easy.

## RELIGION

**BIBLEMEN (3330)** Excellent Bible quiz program.  
**BIBLEWORKS (3356-3361/6 disks)** Nice Bible reference, allows editing. Entire Bible (2 FD or HD)

## EDUCATION

**FUNNELS AND BUCKETS (201)** A fun way to learn math. For ages 5 through 8.  
**AMY'S FIRST PRIMER v1.70 (248)** Child's learning game teaches letters, numbers, keyboard (CGA)  
**FACTS 50 (239)** Geography lessons for U.S. Nice graphics (BASIC).



**GOOGOL MATH (EDU15)** Math learning system. Nice graphics, many levels of difficulty. Excellent (CGA)



NOTE: Minimum program requirements are in parentheses at the end of descriptions. FD=floppy drive, HD=hard drive, CGA=at least CGA, or better (for example, EGA or VGA).

**PC FASTYPE v3.01 (241)** Touch typing instruction program. Includes WPM, accuracy, etc. (CGA)  
**SPANISH I & II (211, 232/2 disks)** Great tutorial (BASIC)

## ACCOUNTING/FINANCE

**MARKETCGA v2.2 (BUS17)** Performs sophisticated analysis on stocks, funds, etc. EGA version is **BUS 16** (CGA)  
**MEDLIN ACCOUNTING (757)** Includes G/L, A/P, A/R and payroll all in one package!  
**EXPRESS CHECK v2.06 (786)** Checking account with running balance, monthly reports, etc. Prints checks.  
**FINANCE MANAGER II G/L v1.3 (751)** For personal or small business financial management (2 FD or HD)

## APPLICATIONS

**FOOTBALL FUN (MIS1)** Manage an office football pool.  
**LOGITI (UTL27)** RAM resident computer logging program.  
**THE NUTRITIONIST (2334)** Evaluates foods, meals and recipes for nutritional content.  
**EZ-FORMS (1909)** Make forms to meet different needs.  
**FAMILY TREE (2201)** Create files and genealogical reports.

**LOTTO PROPHET v2.7 (2364)** Best lotto program we've seen.

## TELECOMMUNICATIONS

**TELEX v3.11 (1161-1162/2 disks)** Comprehensive package. Supports baud rate to 115,200 (modem, 2 FD or HD)  
**WILDCAT v1.03 (1141, 1143/2 disks)** Flexible bulletin board system (modem, HD)  
**PROCOMM v2.43 (1159)** Outstanding modern software (modem)

## SECURITY/HACKING

**COPY PROTECTION IV (1226)** latest release. For adv. programmers (2 FD or HD)  
**FLU SHOT+ v1.5 (1225)** Best protection against the dreaded viruses!  
**VIRUS STOPPER v2.0 (1223)** Protect your system from viruses and trojan horses.

## DATABASE PROGRAMS

**PC-FILE:DB (853-855/3 disks)** Newest version! Report-writer, dBASE III+ compatible data files (HD)  
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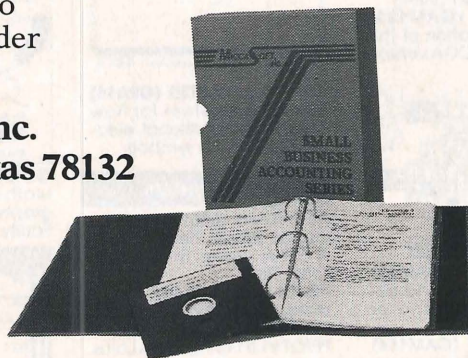
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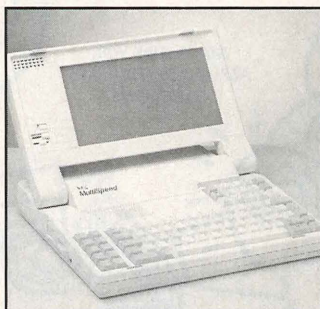
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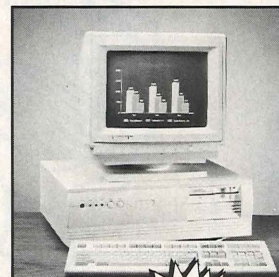
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- Six 16-bit and two 8-bit expansion slots.
- 100% IBM compatible.
- 80287 math co-processor socket.
- 4 extra half height disk drive cavities.
- Built-in real time clock/calendar.
- 1 Centronics parallel printer port.
- 1 RS232C serial communication port.
- 101 AT-style keyboard.
- 200 watt power supply.
- Includes: MS DOS 3.21 & GW-BASIC 3.22.
- Dim.: 19.3" x 16.7" x 6.3".
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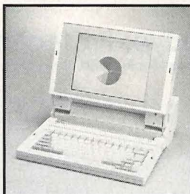
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- 40 MB (28ms) hard drive.
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- 100% IBM compatible.
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- MS-DOS 3.21 included.
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- Socket for 80387 numeric co-processor.
- Internal modem. • Serial and parallel printer ports.
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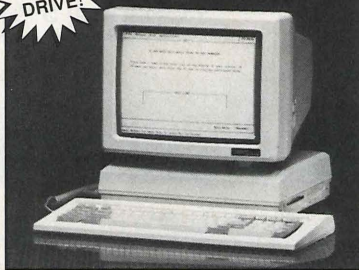
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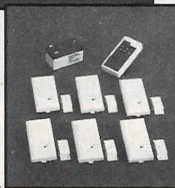
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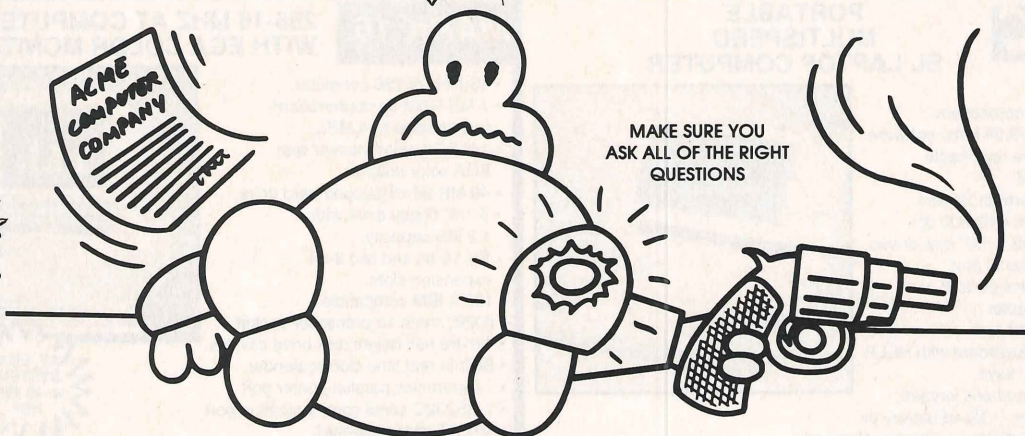
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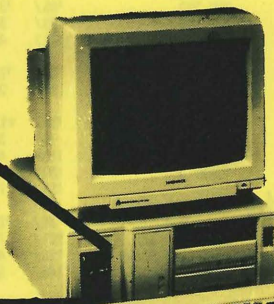
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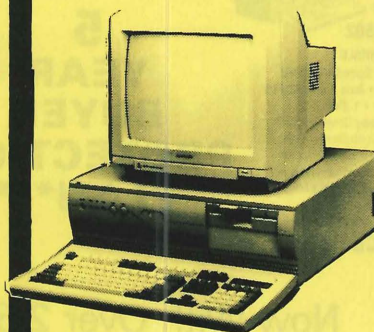


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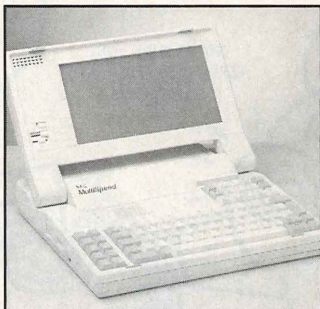
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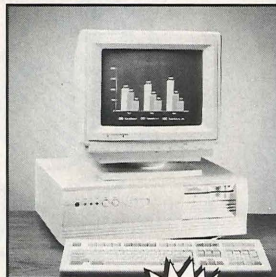
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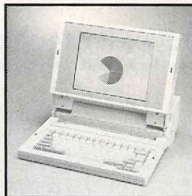


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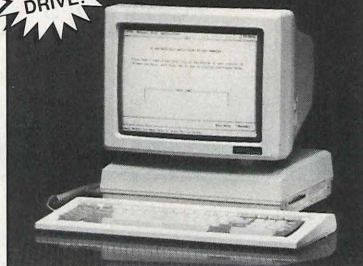
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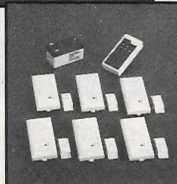
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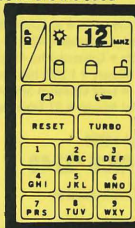
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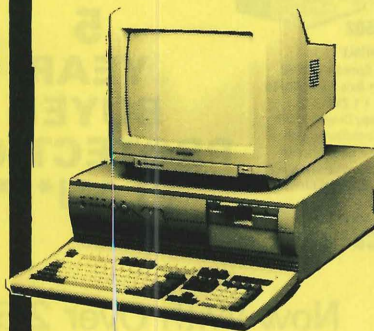


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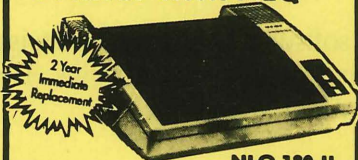
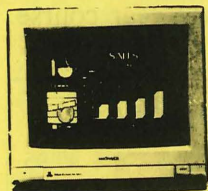
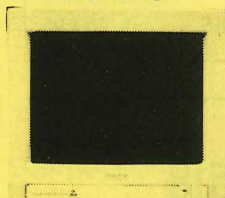
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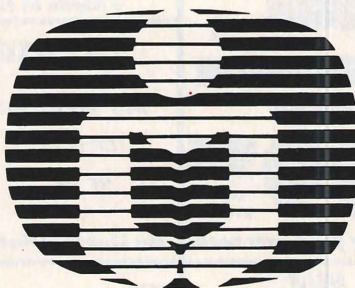
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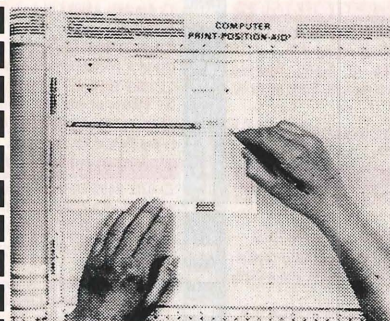
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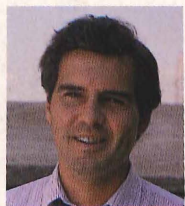
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# The Squeaky Fax Gets the Grease:

## Part II



Last April my column, "The Squeaky Fax Gets the Grease," described the communications log-jam I encountered with just two phone lines. The main problem was this: With the fax machine set on auto answer, human callers who were bounced to line 2 when line 1 was busy heard the screech of the fax instead of a dulcet welcome from yours truly.

That column sparked a barrage of mail, from individuals with cures or questions and from manufacturers with products to save me. It's obvious that professionals working from home, most of whom are used to multiline corporate phone systems, are having difficulty setting up smooth two-line systems. Here's a sampling of the letters and what I've learned from them:

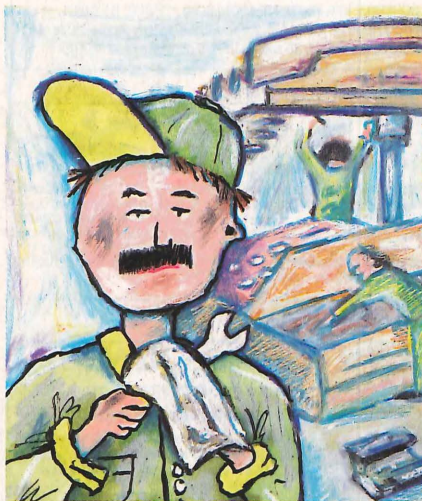
*One thing you might do is get call waiting on your first line. In effect, you get the hold feature without tying up two lines. This would prevent spillover of incoming calls to your second line, leaving it free for your fax machine and modem. After all, you talk on only one line at a time. Edward Goldstein.*

Another reader, John Gray, seconded this idea: "I solved that problem by getting call waiting on my voice line." This sounds like a sensible approach, but I haven't tried it.

From the mailbag: *In your Squeaky Fax column you said that you were going to order a Faxmate 168. Did you? Are you satisfied with it? Would you recommend it? Richard Goudeau.*

The Faxmate 168 (Dragoon Corp.) is one of many voice-data devices on the market that decode and route incoming calls. If the Faxmate hears the proper signal (the CNG "calling tone" that the sending fax machine emits as a kind of mating call) it directs the call to the fax machine; if it doesn't hear the tone, it puts the call through to your phone. Faxmate 168 is relatively inexpensive (\$80), but I cannot recommend it.

When a call comes in, it takes Faxmate five seconds to determine whether or not it hears the tone. When it doesn't hear the tone, Faxmate emits a pathetic beep telling you to pick up the phone. It's an annoying sound, and if you're in another room, you



**Obviously, professionals working from home are having difficulty setting up smooth two-line phone systems.**

can't even hear it (the phone itself doesn't ring). In other words, this device (along with its sloppy documentation) will drive both you and your callers crazy.

From the mailbag: *The Fax Director is a complete voice-data switch that automatically directs all fax and modem calls. Several other products claim to be automatic but are unable to automatically direct fax calls without the CNG tone. (Fax machines in the manual mode do not emit the CNG tone.) Gene Reeder, Data-Doc Electronics*

Data-Doc's Fax Director allows you to leave a message instructing incoming callers which touch-tone (or rotary) code to enter to send a fax or to ring the phone. If no code is entered, the device assumes a fax machine is calling and routes the call to your machine. If you don't want all callers to hear the prerecorded message (which I wouldn't want during business hours), you can always pick up the phone and then enter the code yourself if you hear the CNG tone. Unfortunately, you cannot control the call from extension phones, only from the phone to which the device is connected. And to

connect the Fax Director, you must fiddle with the wall wires of your telephone—not a job for me!

I was still at ground zero. Then I got a phone call from Al Lorenz, president of Lynx Automation, who sent me his product for testing. ExtraLine (\$300), which is about the size of a small disk drive, comes very close to simulating an extra line.

When the phone rings, I pick it up. If it's a person, the call proceeds normally. If it's a CNG tone, ExtraLine rings the fax machine and I can hang up. If a caller wants to send a fax manually, either I or the caller can ring my fax by entering a touch-tone or rotary code. The same code can be entered from extension phones.

If I'm out or don't pick up the phone, ExtraLine calls the fax after a predefined number of rings, which I've set at four. The only problem is that a human can get switched to the fax machine after four rings if no one answers the phone. The solution, of course, is to hook up an answering machine.

From the mailbag: *I guarantee that The Switch will work and that our Model A-1 will even make your wife happy. Lucky R. Marr, president, High-Tech Resources.*

Now there's a claim I had to test. The Switch A-1 (\$160) is a tiny device, "a little bigger than a pack of kingsize cigarettes," in Lucky's lingo. The Switch answers a call, takes 4.5 seconds to determine whether it's a fax or a human, and then calls the appropriate device. The phone on my desk doesn't ring during those 4.5 seconds, but extension phones in other parts of the house do, which is a bit odd. The other drawback is that voice callers must wait 4.5 seconds while The Switch decodes the call. The advantage is that all fax calls go to the fax machine, even when you don't answer the phone, and a voice caller never gets switched to the fax machine.

If you find all this confusing, join the club. A dedicated phone line is certainly a simpler, but more expensive, solution to the home-office phone problem. Thanks for the mail; please keep the suggestions coming. ■

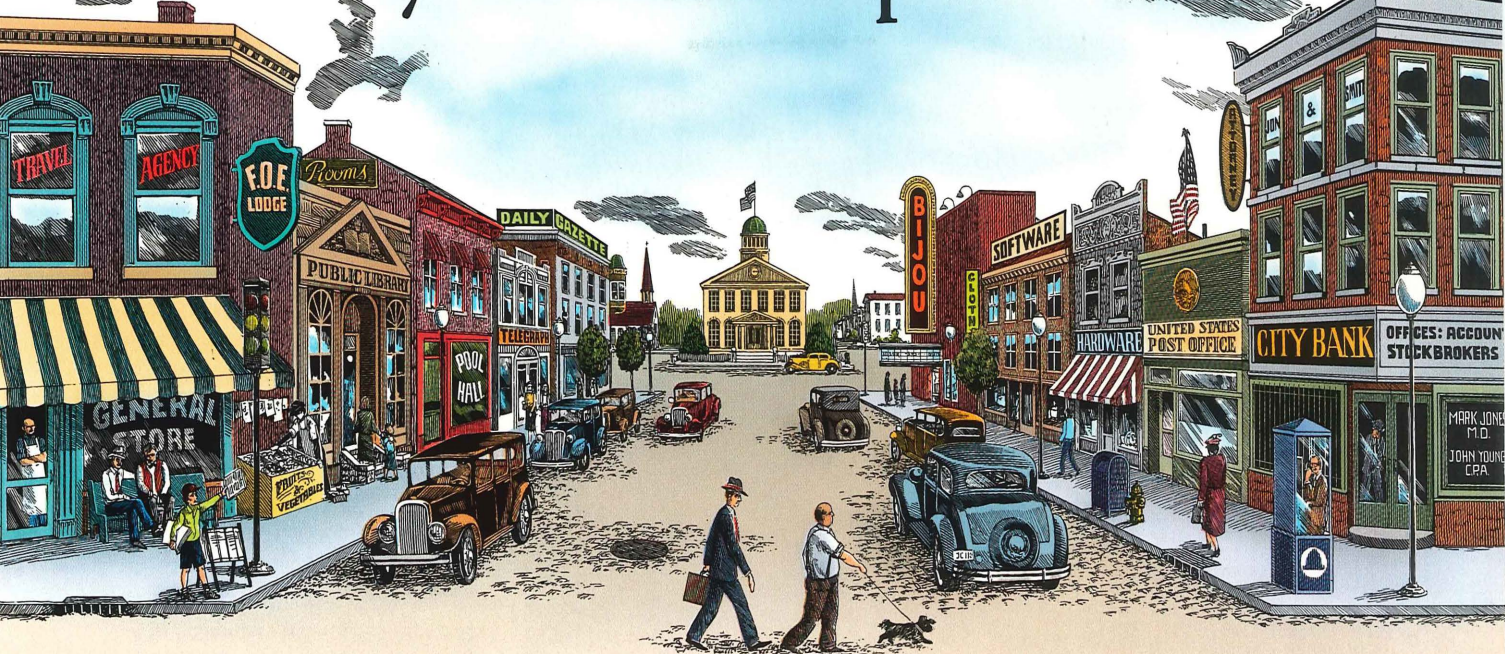
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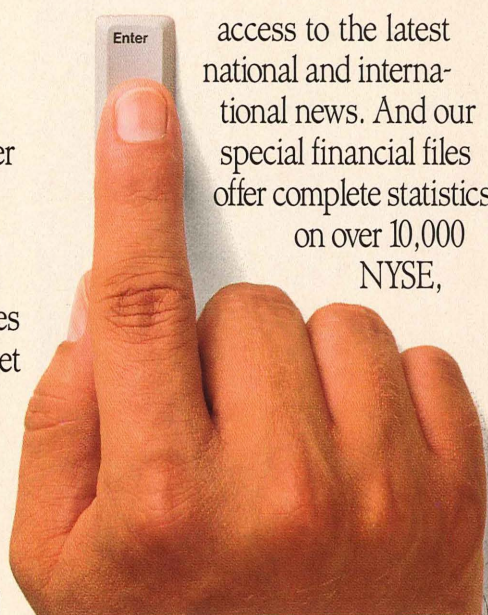


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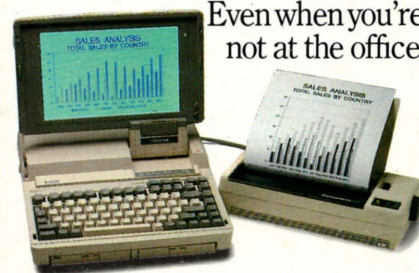
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